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Absolute Absorption Cross Section Measurements of
Ozone and the Temperature Dependence at Four
Reference Wavelengths Leading to Renormalization
of the Cross Section Between 240 and 350 nm

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1. Abstract of Objectives

We have developed techniques for the preparation and preservation of pure ozone which have enabled its absolute cross section at important mercury-line reference wavelength 253.7 nm and at iron line wavelengths 238.3, 245.8 and 263.7 nm to be determined at the temperatures 293, 228 and 195 K. Specially constructed absorption cells are used together with existing spectrometers and associated equipment and light sources which have already been employed successfully to study the absolute cross section of ozone at longer wavelengths. This determination of the temperature dependence of the absolute cross section at 238.3, 245.8, 253.7 and 263.7 nm permit renormalization of the full relative cross sections for ozone between 240 nm and 350 nm. A tabular and computer accessible form of the ozone cross sections data has been made at 5 cm^{-1} intervals. These absolute cross sections and their temperature dependence are needed for accurate calculations of the atmospheric transmission in the visible and near ultraviolet regions.

2. Introduction

The atmospherically important molecule ozone occurs in the troposphere and stratosphere where the temperature ranges approximately from 200 K to 300 K. Accurate calculations of the atmospheric transmission in the visible and near ultraviolet regions therefore require laboratory values of the absorption cross section of ozone and its temperature dependence. In the usual method of determining the absorption cross section $\sigma(\lambda)$ of a molecule, the formula

$$\ln I_0(\lambda)/I(\lambda) = N\sigma(\lambda) \quad (1)$$

is used in which the measured quantities are the ratio of the incident flux

$I_0(\lambda)$ to that transmitted $I(\lambda)$ through the gas and the column density N of absorbing molecules. In the application to ozone the major difficulty has been that the ozone column density is generally not obtainable directly from measurements of the total pressure, because ozone is difficult to prepare free from oxygen and because it decomposes, especially under irradiation, into oxygen. However, we have found that, when special precautions are taken to prepare pure ozone and to prevent its subsequent decomposition, the column density can be obtained accurately from measurement of the total pressure, which can be used with measurements of the optical depth to yield accurate absorption cross sections of ozone.

In the present research, we have measured the absolute cross sections of ozone at 293 K, 228 K, and 195 K at the important mercury-line reference wavelength of 253.7 nm. Many cross section measurements of ozone have been made relative to the cross section at this wavelength. However, existing measurements of the absolute cross section at 253.7 nm are adequate only at room temperature and are unsatisfactory at lower temperatures. The determination of the temperature dependence of the absolute cross section at 253.7 nm would permit many relative cross section measurements in other wavelength region, such as of Bass and Paur (1981, 1985) and our own (Freeman *et al.*, 1981), to be put on a firm absolute basis.

In addition to this investigation at 253.7 nm, which is the usually accepted reference wavelength, we have measured the cross sections of ozone and their temperature dependences at the wavelengths 238.28, 245.83 and 263.66 nm, at the same temperatures (293 K, 228 K and 195 K) at which the study at 253.7 nm is conducted. The results have been combined with the absolute cross sections of ozone at several discrete wavelengths in the region 289-335 nm made earlier. These results permit renormalization of

the full relative cross section of ozone between 240 and 350 nm. We have constructed a tabular computer-accessible array of ozone cross sections at intervals of 5 cm^{-1} .

3. Absorption Cross Section Measurements of Ozone

3.1 Ozone Absorption Cell and Preparation of Ozone

A specially designed ozone absorption cell, made primarily of Pyrex glass but possessing fused silica windows, has been constructed. The vacuum-tight cell has been out-gassed by baking under vacuum, and passivated by prolonged exposure to ozone. The entire ozone column is cooled to 228 K or 195 K by immersing the cell in stirred methanol which is cooled by a cold finger connected to an external refrigeration unit. The experimental arrangement is shown in Fig. 1. Tubes with silica windows at each end are mounted to the end of the absorption cell. The tubes are evacuated to prevent condensation of atmospheric water on the cooled windows and also to provide thermal insulation.

Ozone is prepared from pure oxygen (Airco grade 4.5 passed through a liquid nitrogen trap) at 78 K in a Tesla discharge, by cooling liquid ozone at 78 K, and purifying it by pumping off residual oxygen from the oxygen/ozone mixture at 78 K. The ozone was not stored on silica gel because it absorbs not only ozone but also oxygen.

3.2 Optical Depth Measurements

The background continuum is provided by a hydrogen discharge lamp that is connected to the entrance slit assembly of a 0.3 m Czerny-Turner monochrometer. The hollow cathode or mercury lamp are set behind the

hydrogen discharge lamp and are used to locate the required wavelengths. A thermally controlled mercury lamp is also used as the background source at 253.7 nm. Slit heights are limited to 2 mm to cut down scattered light which is estimated to be about 2% with continuum radiation as the background source. At 253.7 nm, the mercury line is also used as background radiation in which case there is negligible scattered light.

The incident intensity (I_0) was measured after ozone in the absorption cell was pumped out through traps cooled with liquid nitrogen. Ozone trapped at liquid nitrogen temperature has a vapour pressure of 2.5 m Torr at 78 K (Hanson and Mauersberger, 1986) and was measured as 3 m Torr in our experiment. It should be noted that with 2.5 m Torr of ozone in the 10 cm cell about 1% absorption is expected at 253.7 nm where the cross section of ozone is $1.15 \times 10^{-17} \text{ cm}^2$. This significant absorption was taken into account when the incident intensity I_0 was measured.

4. Results

The absolute cross sections at the wavelengths 238.28, 245.83, 253.73 and 263.66 nm have been measured at 295 K, 228 K and 195 K. Those numbers are listed in Table 1 with the absolute cross sections measured previously for the longer wavelength region. All measurements except the one at 253.7 nm were obtained with the background continuum radiation from a hydrogen discharge or xenon arc. The optical depth, $\ln I_0/I$, has been limited to the range 2.0-0.5 in the entire set of measurements. The 0.7% uncertainty in the cross sections arises from the statistical scatter of 0.3-0.5% in the optical depths, uncertainty of 0.2% in the optical path length, uncertainties of 0.1-0.4% in the temperatures, and an uncertainty of 0.5% in the pressure measurement. Another possible source of error is the

purity of ozone which we assumed to be 100% pure to obtain the column density.

The absorption cross section of ozone at five mercury wavelengths are compared with those of previous work in Table 2, where only photoelectric measurements are collected. The agreement is reasonable at most wavelengths. All measurements are scattered within 2.5% of the average values but the values by Molina and Molina (1986) are slightly higher than other measurements, though by less than 1%. Without the values of Molina and Molina, all would agree within 1.5%. It should be emphasized that it is very difficult to achieve better than 1% uncertainty in photoabsorption cross section measurements and an additional problem is presented in the case of ozone because of its tendency to decompose. This agreement with many different techniques is quite satisfactory.

The values of the absolute cross sections of ozone at 195 K are compared with those from the our published relative cross section measurements throughout the region 238-344 nm (Freeman *et al.*, 1984). The ratio of the absolute to the published numbers are listed in the sixth column of Table 1 of Quarterly Status Report No. 9. The cubic least-squares fit to those ratio leads to the smooth conversion factors for every wavelength and the conversion factors put our published numbers on an absolute bases. The results are shown in Table 3 at intervals of 5 cm^{-1} throughout the region of measurements and also are plotted in Fig. 2. In the same table, the calculated cross sections at 195 K from the parameters supplied by Bass are listed and their ratios are also listed in the same table. The calculated cross sections at 195 K by Bass are also plotted in Fig. 3. Except for the very longer wavelengths, both sets of numbers agree within 2-3%. In the longer wavelengths where band structures appear,

differences increase to around 20%, especially at the minimum absorption of the bands. We believe that the differences in the longer wavelengths are due to the limited sensitivity of Bass's technique for such weak absorption.

5. Presentations

5.1 Publications

Absolute Absorption Cross Section Measurements of Ozone in the Wavelength Region 238-335 nm and the Temperature Dependence, K. Yoshino, D.E. Freeman, J.R. Esmond, and W.H. Parkinson, *Planet. Space Sci.*, accepted for publication.

5.2 Presentation at Meetings and Seminars

3/25/87 Seminar at Dalhousie University, Halifax, Canada.

High Resolution Ultraviolet Absorption Cross Sections of Atmospheric Molecules.

K. Yoshino

5/18-20/87 The Cambridge Meeting of the American Physical Society
The 18th Annual Meeting of the Division of Atomic, Molecular, and Optical Physics

High Resolution Absorption Cross Sections of Atmospheric Molecules in the Wavelength Region 175-350 nm

K. Yoshino, D.E. Freeman, A.S.-C. Cheung, J.R. Esmond and W.H. Parkinson

6/2-4/87 The 10th Annual Review Conference, AFGL, Bedford, MA

Absolute Absorption Cross Section Measurements of Ozone and the
Temperature Dependence

K. Yoshino, D.E. Freeman, and W.H. Parkinson

6/15-19/87 42nd Symposium on Molecular Spectroscopy

Absolute Absorption Cross Section Measurements of Ozone and
the Temperature Dependence.

K. Yoshino, D.E. Freeman, and W.H. Parkinson

10/27/87 Seminar at Herzberg Institute of Astrophysics, NRC, Canada

High-Resolution VUV Studies of the Atmospheric Transmittance

K. Yoshino

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Molina, L.T. and Molina, M.J. (1986) Absolute absorption cross sections of ozone in the 185-350 nm wavelength range, J. Geophys. Res. 91, 14501.

Table 1. Absorption Cross Sections of Ozone, in Units of 10^{-x} cm^2

Wavelength (nm)			Cross Sections ^a					
Vacuum	Air	x	295 K		228 K		195 K	
238.2762	238.2035	18	7.45	[15]	7.51	[15]	7.51	[52]
245.8341	245.7597	17	1.010	[9]	1.006	[11]	1.017	[9]
253.7279	253.6517	17	1.144	[8]	1.154	[10]	1.152	[10]
253.7279	253.6517 (Hg)	17	1.145	[26]	1.155	[18]	1.151	[15]
263.6594	263.5809	18	9.71	[9]	9.66	[9]	9.64	[11]
272.1708	272.0902	18	6.82	[4]	6.70	[4]	6.67	[2]
281.4115	281.3286	18	3.52	[6]	3.31	[4]	3.30	[5]
289.4446 ^b	289.3598	18	1.488	[5]	1.402	[4]	1.399	[5]
296.8150 ^b	296.7284	19	5.97	[6]	5.60	[4]	5.50	[5]
302.2380 ^b	302.1500	19	2.91	[5]	2.65	[5]	2.58	[5]
314.2242	314.1332	20	5.86	[5]	4.86	[5]	4.50	[5]
322.1649	322.0719	20	2.39	[6]	2.15	[4]	2.00	[3]
334.2442 ^b	334.1481	21	4.37	[3]	3.11	[3]	2.03	[3]
344.3526	344.2539	21	1.132	[3]	0.974	[3]	0.843	[3]

^aThe numbers in the brackets are the numbers of optical depth measurements.

^bCross sections were presented previously [Freeman et al., 1985].

Table 2. Absorption Cross Sections of Ozone in Units of 10^{-x} cm^2 ,
at Hg I Wavelengths

Temperature K	x=17	18	19	19	21
		Cross Section			
	$\lambda 253.6$	$\lambda 289.3$	$\lambda 296.7$	$\lambda 302.1$	$\lambda 334.1$
YFEP ^a (1988)	295 228	1.145 1.155	1.488 1.402	5.97 5.60	2.91 2.65
MM ^b (1986)	298 226	1.157 1.166	1.540 1.468	6.229 5.766	3.027 2.720
MBHMC ^c (1986)	297	1.137			
BM ^d (1987)	297 221	1.136 1.144			
BPE ^e (1985)	298 228		1.501 1.423	6.07 5.59	2.94 2.64
MBD ^f (1985)	298		1.436	5.83	2.83
H ^g (1961)	294	1.147	1.47	5.971	2.860
IT ^h (1953)	295	1.140	1.46	5.76	2.84

^aYoshino, Freeman, Esmond and Parkinson, present work

^bMolina and Molina (1986)

^cMauersberger, Barnes, Hanson and Morton (1986)

^dBarnes and Mauersberger (1987)

^eBass and Paur (1985)

^fMalicet, Brion and Daumont (1985)

^gHearn (1961)

^hInn and Tanaka (1953)

Table 3

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO - Bass / HCO

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
28600.000	3.21E 23			28875.000	9.90E 22			29150.000	2.26E 22			5.12E 22	2.266		
28605.000	3.10E 23			28880.000	1.01E 22			29155.000	2.01E 22			5.14E 22	2.558		
28610.000	2.65E 23			28885.000	1.05E 22			29160.000	1.94E 22			4.90E 22	2.524		
28615.000	2.62E 23			28890.000	1.09E 22			29165.000	1.77E 22			4.65E 22	2.628		
28620.000	3.01E 23			28895.000	1.24E 22			29170.000	1.61E 22			4.41E 22	2.704		
28625.000	3.29E 23			28900.000	1.27E 22			29175.000	1.54E 22			4.16E 22	2.703		
28630.000	3.08E 23			28905.000	1.39E 22			29180.000	1.59E 22			3.92E 22	2.479		
28635.000	3.47E 23			28910.000	1.47E 22			29185.000	1.55E 22			3.67E 22	2.369		
28640.000	3.47E 23			28915.000	1.31E 22			29190.000	1.51E 22			3.52E 22	2.334		
28645.000	3.76E 23			28920.000	1.54E 22			29195.000	1.61E 22			3.61E 22	2.244		
28650.000	3.58E 23			28925.000	1.63E 22			29200.000	1.69E 22			3.70E 22	2.191		
28655.000	4.17E 23			28930.000	1.66E 22			29205.000	1.69E 22			3.79E 22	2.244		
28660.000	3.98E 23			28935.000	1.65E 22			29210.000	1.71E 22			3.88E 22	2.193		
28665.000	4.46E 23			28940.000	1.67E 22			29215.000	1.81E 22			3.97E 22	2.194		
28670.000	4.75E 23			28945.000	1.79E 22			29220.000	1.96E 22			4.06E 22	2.071		
28675.000	5.95E 23			28950.000	1.95E 22			29225.000	2.00E 22			4.15E 22	2.074		
28680.000	5.53E 23			28955.000	1.90E 22			29230.000	2.13E 22			4.24E 22	1.990		
28685.000	5.53E 23			28960.000	2.24E 22			29235.000	2.11E 22			4.20E 22	1.990		
28690.000	6.21E 23			28965.000	2.38E 22			29240.000	2.20E 22			4.12E 22	1.871		
28695.000	6.67E 23			28970.000	2.56E 22			29245.000	2.22E 22			4.04E 22	1.826		
28700.000	6.27E 23			28975.000	2.67E 22			29250.000	2.29E 22			3.95E 22	1.727		
28705.000	7.16E 23			28980.000	2.99E 22			29255.000	2.35E 22			3.87E 22	1.648		
28710.000	7.71E 23			28985.000	3.19E 22			29260.000	2.49E 22			3.79E 22	1.523		
28715.000	9.02E 23			28990.000	3.66E 22			29265.000	2.50E 22			3.71E 22	1.484		
28720.000	6.88E 23			28995.000	3.75E 22			29270.000	2.69E 22			4.02E 22	1.494		
28725.000	1.07E 22			29000.000	4.08E 22			29275.000	2.75E 22			4.36E 22	1.586		
28730.000	1.15E 22			29005.000	4.68E 22			29280.000	2.93E 22			4.71E 22	1.606		
28735.000	1.24E 22			29010.000	4.97E 22			29285.000	3.23E 22			5.05E 22	1.563		
28740.000	1.33E 22			29015.000	5.39E 22			29290.000	3.39E 22			5.39E 22	1.591		
28745.000	1.42E 22			29020.000	5.96E 22			29295.000	3.81E 22			5.74E 22	1.506		
28750.000	1.60E 22			29025.000	6.53E 22			29300.000	3.96E 22			6.08E 22	1.535		
28755.000	1.82E 22			29030.000	7.10E 22			29305.000	4.32E 22			6.42E 22	1.487		
28760.000	1.94E 22			29035.000	7.79E 22			29310.000	4.71E 22			6.77E 22	1.437		
28765.000	2.06E 22			29040.000	8.40E 22			29315.000	5.09E 22			7.11E 22	1.397		
28770.000	2.38E 22			29045.000	9.08E 22			29320.000	5.62E 22			7.46E 22	1.327		
28775.000	2.49E 22			29050.000	9.71E 22			29325.000	6.02E 22			7.80E 22	1.296		
28780.000	2.61E 22			29055.000	1.04E 22			29330.000	6.60E 22			7.49E 22	1.241		
28785.000	2.76E 22			29060.000	1.09E 22			29335.000	6.99E 22			8.06E 22	1.214		
28790.000	2.91E 22			29065.000	1.11E 22			29340.000	7.76E 22			8.49E 22	1.199		
28795.000	3.01E 22			29070.000	1.08E 21			29345.000	8.90E 22			8.83E 22	1.138		
28800.000	2.91E 22			29075.000	9.60E 22			29350.000	9.31E 22			9.52E 22	1.079		
28805.000	2.35E 22			29080.000	1.04E 21			29355.000	1.03E 21			9.86E 22	0.957		
28810.000	1.53E 22			29085.000	1.09E 21			29360.000	1.11E 21			1.19E 21	0.741		
28815.000	1.11E 22			29090.000	1.26E 21			29365.000	1.23E 21			1.23E 21	0.739		
28820.000	1.22E 22			29095.000	1.88E 21			29370.000	1.31E 21			1.06E 21	0.858		
28825.000	8.22E 21			29100.000	3.67E 22			29375.000	1.42E 21			1.12E 21	0.832		
28830.000	6.53E 23			29105.000	5.0E 22			29380.000	1.54E 21			1.16E 21	0.752		
28835.000	6.44E 23			29110.000	5.4E 22			29385.000	1.61E 21			1.19E 21	0.741		
28840.000	6.43E 23			29115.000	5.8E 22			29390.000	1.68E 21			1.23E 21	0.739		
28845.000	6.22E 23			29120.000	6.6E 22			29395.000	1.68E 21			1.26E 21	0.751		
28850.000	7.12E 23			29125.000	7.0E 22			29400.000	1.69E 21			1.26E 21	0.768		
28855.000	7.97E 23			29130.000	7.6E 22			29405.000	1.76E 21			1.36E 21	0.836		
28860.000	8.77E 23			29135.000	8.2E 22			29410.000	1.84E 21			1.44E 21	0.836		
28865.000	8.23E 23			29140.000	8.9E 22			29415.000	1.92E 21			1.64E 22	0.847		
28870.000	9.44E 23			29145.000	9.7E 22			29420.000	1.97E 22			1.87E 22	0.889		

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO (2)											
Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
29425.000	6.03E-22	5.95E-22	0.987	29700.000	1.67E-21	1.75E-21	1.048	29975.000	3.95E-21	4.03E-21	1.021
29430.000	5.70E-22	5.13E-22	0.900	29705.000	1.75E-21	1.67E-21	0.957	29980.000	2.95E-21	3.16E-21	1.071
29435.000	5.53E-22	5.10E-22	0.922	29710.000	1.81E-21	1.80E-21	0.993	29985.000	2.51E-21	2.53E-21	1.008
29440.000	5.68E-22	6.11E-22	1.075	29715.000	1.83E-21	1.75E-21	0.959	29990.000	2.24E-21	2.15E-21	0.961
29445.000	5.78E-22	6.48E-22	1.122	29720.000	1.72E-21	1.66E-21	0.966	29995.000	2.14E-21	1.97E-21	0.921
29450.000	5.76E-22	5.88E-22	1.021	29725.000	1.53E-21	1.36E-21	0.887	30000.000	2.14E-21	1.88E-21	0.877
29455.000	5.68E-22	5.35E-22	0.943	29730.000	1.23E-21	1.06E-21	0.860	30005.000	2.16E-21	1.90E-21	0.877
29460.000	5.69E-22	5.42E-22	0.952	29735.000	9.93E-22	9.46E-22	0.953	30010.000	2.22E-21	1.94E-21	0.875
29465.000	5.48E-22	4.87E-22	0.889	29740.000	8.54E-22	8.62E-22	1.009	30015.000	2.17E-21	2.00E-21	0.920
29470.000	5.07E-22	4.91E-22	0.968	29745.000	7.85E-22	7.63E-22	0.972	30020.000	2.24E-21	2.03E-21	0.906
29475.000	4.63E-22	4.92E-22	1.062	29750.000	7.01E-22	7.81E-22	1.114	30025.000	2.23E-21	2.02E-21	0.907
29480.000	4.40E-22	3.62E-22	0.822	29755.000	6.99E-22	7.20E-22	1.029	30030.000	2.15E-21	1.97E-21	0.917
29485.000	4.39E-22	4.74E-22	1.080	29760.000	6.67E-22	7.06E-22	1.058	30035.000	2.00E-21	1.95E-21	0.975
29490.000	4.37E-22	5.27E-22	1.205	29765.000	6.62E-22	6.72E-22	1.016	30040.000	1.84E-21	1.70E-21	0.922
29495.000	4.45E-22	4.48E-22	1.007	29770.000	6.84E-22	6.69E-22	0.979	30045.000	1.57E-21	1.58E-21	1.008
29500.000	4.58E-22	4.55E-22	0.994	29775.000	7.13E-22	6.92E-22	0.971	30050.000	1.49E-21	1.45E-21	0.976
29505.000	4.71E-22	5.47E-22	1.162	29780.000	7.39E-22	6.52E-22	0.862	30055.000	1.40E-21	1.35E-21	0.961
29510.000	4.74E-22	4.14E-22	0.873	29785.000	7.41E-22	6.73E-22	0.908	30060.000	1.37E-21	1.28E-21	0.933
29515.000	5.01E-22	4.87E-22	0.972	29790.000	7.56E-22	7.06E-22	0.928	30065.000	1.38E-21	1.22E-21	0.887
29520.000	5.18E-22	5.41E-22	1.044	29795.000	7.37E-22	7.33E-22	0.995	30070.000	1.45E-21	1.26E-21	0.868
29525.000	5.34E-22	5.41E-22	1.013	29800.000	7.40E-22	6.55E-22	0.885	30075.000	1.53E-21	1.33E-21	0.867
29530.000	5.71E-22	6.15E-22	1.077	29805.000	7.65E-22	6.74E-22	0.862	30080.000	1.59E-21	1.35E-21	0.846
29535.000	6.14E-22	6.55E-22	1.066	29810.000	7.83E-22	7.22E-22	0.922	30085.000	1.62E-21	1.38E-21	0.855
29540.000	6.51E-22	7.42E-22	1.140	29815.000	8.09E-22	7.60E-22	0.940	30090.000	1.81E-21	1.49E-21	0.826
29545.000	7.06E-22	6.70E-22	0.949	29820.000	8.44E-22	7.89E-22	0.935	30095.000	1.90E-21	1.58E-21	0.832
29550.000	7.61E-22	7.88E-22	1.035	29825.000	8.86E-22	8.30E-22	0.985	30100.000	1.91E-21	1.64E-21	0.861
29555.000	8.24E-22	8.91E-22	1.081	29830.000	9.59E-22	9.67E-22	1.008	30105.000	2.17E-21	1.80E-21	0.828
29560.000	9.21E-22	9.93E-22	1.078	29835.000	1.03E-21	9.83E-22	0.955	30110.000	2.35E-21	1.92E-21	0.816
29565.000	9.97E-22	9.95E-22	0.998	29840.000	1.11E-21	9.97E-22	0.898	30115.000	2.49E-21	2.02E-21	0.813
29570.000	1.08E-21	1.02E-21	0.947	29845.000	1.09E-21	9.70E-22	0.940	30120.000	2.70E-21	2.15E-21	0.796
29575.000	1.19E-21	1.21E-21	1.015	29850.000	1.27E-21	1.11E-21	0.872	30125.000	2.87E-21	2.34E-21	0.814
29580.000	1.39E-21	1.26E-21	0.972	29855.000	1.37E-21	1.24E-21	0.908	30130.000	2.16E-21	2.55E-21	0.808
29585.000	1.41E-21	1.35E-21	0.961	29860.000	1.50E-21	1.35E-21	0.903	30135.000	3.41E-21	2.75E-21	0.805
29590.000	1.52E-21	1.54E-21	1.014	29865.000	1.61E-21	1.43E-21	0.888	30140.000	3.69E-21	2.89E-21	0.784
29595.000	1.67E-21	1.75E-21	1.051	29870.000	1.71E-21	1.54E-21	0.900	30145.000	4.10E-21	3.09E-21	0.754
29600.000	1.84E-21	1.98E-21	1.077	29875.000	1.63E-21	1.65E-21	0.861	30150.000	4.39E-21	3.52E-21	0.801
29605.000	2.00E-21	1.92E-21	0.958	29880.000	1.96E-21	1.75E-21	0.893	30155.000	4.77E-21	3.79E-21	0.795
29610.000	2.15E-21	2.22E-21	1.033	29885.000	2.01E-21	1.84E-21	0.918	30160.000	5.15E-21	4.05E-21	0.787
29615.000	2.38E-21	2.34E-21	0.981	29890.000	2.09E-21	1.85E-21	0.884	30165.000	5.74E-21	4.40E-21	0.766
29620.000	2.56E-21	2.65E-21	1.035	29895.000	2.22E-21	1.94E-21	0.873	30170.000	6.14E-21	4.83E-21	0.786
29625.000	2.79E-21	2.82E-21	1.009	29900.000	2.35E-21	2.10E-21	0.893	30175.000	6.69E-21	5.45E-21	0.815
29630.000	3.00E-21	3.07E-21	1.024	29905.000	2.53E-21	2.31E-21	0.931	30180.000	7.04E-21	5.96E-21	0.820
29635.000	3.21E-21	3.29E-21	1.024	29910.000	2.73E-21	2.48E-21	0.907	30185.000	7.72E-21	6.10E-21	0.790
29640.000	3.37E-21	3.43E-21	1.024	29915.000	3.06E-21	2.59E-21	0.846	30190.000	8.20E-21	6.62E-21	0.808
29645.000	3.48E-21	3.44E-21	0.988	29920.000	3.34E-21	2.88E-21	0.865	30195.000	8.50E-21	7.21E-21	0.848
29650.000	3.49E-21	3.29E-21	0.944	29925.000	3.62E-21	3.10E-21	0.855	30200.000	8.65E-21	7.28E-21	0.842
29655.000	3.49E-21	2.71E-21	0.824	29930.000	3.98E-21	3.46E-21	0.869	30205.000	8.33E-21	7.22E-21	0.866
29660.000	2.70E-21	2.38E-21	0.880	29935.000	4.34E-21	3.70E-21	0.853	30210.000	7.04E-21	6.93E-21	0.985
29665.000	1.99E-21	2.04E-21	1.023	29940.000	4.67E-21	3.95E-21	0.846	30215.000	5.72E-21	6.33E-21	1.028
29670.000	1.69E-21	1.66E-21	1.001	29945.000	5.07E-21	4.40E-21	0.867	30220.000	5.26E-21	4.88E-21	0.928
29675.000	1.52E-21	1.66E-21	1.095	29950.000	5.38E-21	4.75E-21	0.883	30225.000	5.25E-21	4.50E-21	0.857
29680.000	1.49E-21	1.57E-21	1.054	29955.000	5.64E-21	5.00E-21	0.887	30230.000	5.32E-21	4.41E-21	0.830
29685.000	1.51E-21	1.51E-21	1.037	29960.000	5.71E-21	5.00E-21	0.875	30235.000	5.53E-21	4.54E-21	0.821
29690.000	1.55E-21	1.56E-21	1.003	29965.000	5.59E-21	5.11E-21	0.915	30240.000	5.90E-21	4.63E-21	0.785
29695.000	1.62E-21	1.66E-21	1.024	29970.000	5.13E-21	4.84E-21	0.943	30245.000	6.17E-21	4.96E-21	0.804

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
30250.000	6.56E-21	5.38E-21	0.820	30255.000	7.07E-21	6.03E-21	0.853	30800.000	9.59E-21	9.52E-21	0.993
30255.000	6.94E-21	5.49E-21	0.791	30260.000	7.29E-21	6.02E-21	0.826	30805.000	9.26E-21	8.88E-21	0.959
30260.000	7.18E-21	5.85E-21	0.814	30265.000	7.64E-21	6.13E-21	0.802	30810.000	9.23E-21	8.60E-21	0.932
30265.000	7.25E-21	6.13E-21	0.845	30270.000	8.44E-21	6.63E-21	0.825	30815.000	9.21E-21	8.58E-21	0.931
30270.000	7.07E-21	6.11E-21	0.864	30275.000	8.32E-21	6.88E-21	0.826	30820.000	9.22E-21	8.53E-21	0.925
30275.000	6.25E-21	5.85E-21	0.935	30280.000	8.52E-21	7.06E-21	0.829	30825.000	9.26E-21	8.65E-21	0.934
30280.000	4.78E-21	5.08E-21	1.062	30285.000	8.63E-21	7.09E-21	0.822	30830.000	9.46E-21	8.81E-21	0.932
30285.000	3.77E-21	3.72E-21	0.987	30290.000	8.37E-21	7.17E-21	0.857	30835.000	9.44E-21	8.89E-21	0.942
30290.000	3.22E-21	2.97E-21	0.921	30295.000	7.93E-21	6.84E-21	0.863	30840.000	9.20E-21	8.89E-21	0.967
30295.000	2.92E-21	2.65E-21	0.908	30300.000	7.05E-21	6.33E-21	0.902	30845.000	8.75E-21	8.61E-21	0.984
30300.000	2.79E-21	2.28E-21	0.817	30305.000	5.72E-21	5.45E-21	0.953	30850.000	7.96E-21	8.16E-21	1.025
30305.000	2.78E-21	2.25E-21	0.810	30310.000	5.01E-21	4.79E-21	0.956	30855.000	7.11E-21	7.38E-21	1.038
30310.000	2.84E-21	2.29E-21	0.806	30315.000	4.65E-21	4.05E-21	0.872	30860.000	6.52E-21	6.85E-21	1.051
30315.000	2.87E-21	2.29E-21	0.798	30320.000	4.00E-21	3.73E-21	0.848	30865.000	6.35E-21	6.15E-21	1.015
30320.000	2.80E-21	2.36E-21	0.842	30325.000	3.059E-00	3.36E-21	0.850	30870.000	6.19E-21	6.15E-21	0.994
30325.000	2.96E-21	2.42E-21	0.817	30330.000	4.46E-21	3.78E-21	0.848	30875.000	6.22E-21	6.07E-21	0.976
30330.000	3.04E-21	2.49E-21	0.818	30335.000	4.50E-21	3.76E-21	0.835	30880.000	6.29E-21	6.07E-21	0.965
30335.000	2.85E-21	2.45E-21	0.858	30340.000	4.58E-21	3.86E-21	0.843	30885.000	6.67E-21	6.18E-21	0.927
30340.000	2.77E-21	2.34E-21	0.845	30345.000	4.82E-21	3.99E-21	0.829	30890.000	6.74E-21	6.45E-21	0.958
30345.000	2.63E-21	2.22E-21	0.844	30350.000	4.89E-21	4.14E-21	0.847	30895.000	7.14E-21	6.68E-21	0.936
30350.000	2.55E-21	2.22E-21	0.870	30355.000	5.13E-21	4.33E-21	0.845	30900.000	7.51E-21	7.09E-21	0.945
30355.000	2.56E-21	2.12E-21	0.827	30360.000	5.25E-21	4.54E-21	0.865	30905.000	7.71E-21	7.45E-21	0.967
30360.000	2.60E-21	2.26E-21	0.868	30365.000	5.21E-21	4.66E-21	0.894	30910.000	8.38E-21	7.73E-21	0.922
30365.000	2.71E-21	2.25E-21	0.831	30370.000	5.52E-21	4.72E-21	0.855	30915.000	8.79E-21	8.16E-21	0.929
30370.000	2.83E-21	2.32E-21	0.819	30375.000	5.60E-21	4.97E-21	0.887	30920.000	9.17E-21	8.83E-21	0.963
30375.000	2.93E-21	2.36E-21	0.809	30380.000	5.89E-21	5.14E-21	0.873	30925.000	9.73E-21	9.39E-21	0.965
30380.000	3.13E-21	2.53E-21	0.809	30385.000	6.19E-21	5.42E-21	0.875	30930.000	1.03E-20	9.75E-21	0.946
30385.000	3.30E-21	2.72E-21	0.825	30390.000	6.58E-21	5.76E-21	0.878	30935.000	1.11E-20	1.02E-20	0.923
30390.000	3.54E-21	2.87E-21	0.812	30395.000	7.17E-21	6.17E-21	0.860	30940.000	1.11E-20	1.11E-20	0.937
30395.000	3.83E-21	2.32E-21	0.819	30400.000	7.39E-21	6.56E-21	0.888	30945.000	1.27E-20	1.20E-20	0.949
30400.000	3.99E-21	3.35E-21	0.839	30405.000	8.26E-21	6.94E-21	0.841	30950.000	1.37E-20	1.30E-20	0.947
30405.000	4.30E-21	3.52E-21	0.809	30410.000	8.79E-21	7.59E-21	0.863	30955.000	1.50E-20	1.37E-20	0.913
30410.000	4.68E-21	3.89E-21	0.811	30415.000	9.58E-21	8.30E-21	0.867	30960.000	1.58E-20	1.49E-20	0.943
30415.000	5.06E-21	4.03E-21	0.797	30420.000	1.04E-20	8.82E-21	0.848	30965.000	1.74E-20	1.60E-20	0.918
30420.000	5.48E-21	4.39E-21	0.801	30425.000	1.09E-20	9.56E-21	0.877	30970.000	1.84E-20	1.74E-20	0.945
30425.000	5.86E-21	4.85E-21	0.827	30430.000	1.13E-20	1.01E-20	0.853	30975.000	1.98E-20	1.84E-20	0.930
30430.000	6.48E-21	5.28E-21	0.814	30435.000	1.25E-20	1.11E-20	0.880	30980.000	2.05E-20	1.92E-20	0.947
30435.000	7.01E-21	5.69E-21	0.811	30440.000	1.30E-20	1.16E-20	0.894	30985.000	2.16E-20	2.02E-20	0.934
30440.000	7.50E-21	6.03E-21	0.804	30445.000	1.34E-20	1.20E-20	0.892	30990.000	2.11E-20	2.10E-20	0.996
30445.000	8.14E-21	6.62E-21	0.813	30450.000	1.36E-20	1.28E-20	0.948	30995.000	2.04E-20	2.04E-20	1.065
30450.000	9.02E-21	7.31E-21	0.801	30455.000	1.39E-20	1.18E-20	0.877	31000.000	1.65E-20	1.50E-20	1.153
30455.000	9.69E-21	7.98E-21	0.823	30460.000	1.42E-20	1.11E-20	0.881	31005.000	1.58E-20	1.49E-20	1.030
30460.000	1.06E-20	8.51E-21	0.803	30465.000	1.45E-20	1.04E-20	0.919	31010.000	1.61E-20	1.61E-20	1.070
30465.000	1.14E-20	9.07E-21	0.796	30470.000	1.49E-20	1.06E-20	0.887	31015.000	1.70E-20	1.64E-20	0.967
30470.000	1.22E-20	1.02E-20	0.838	30475.000	1.26E-20	1.10E-20	0.876	31020.000	1.92E-20	1.73E-20	1.072
30475.000	1.31E-20	1.09E-20	0.832	30480.000	1.40E-20	1.13E-20	0.941	31025.000	1.68E-20	1.82E-20	0.966
30480.000	1.37E-20	1.15E-20	0.839	30485.000	1.47E-20	1.32E-20	0.895	31030.000	2.03E-20	1.92E-20	1.124
30485.000	1.41E-20	1.17E-20	0.832	30490.000	1.57E-20	1.13E-20	0.919	31035.000	2.11E-20	2.04E-20	0.965
30490.000	1.44E-20	1.20E-20	0.847	30495.000	1.66E-20	1.49E-20	0.896	31040.000	2.21E-20	2.15E-20	0.972
30495.000	1.35E-20	1.17E-20	0.864	30500.000	1.76E-20	1.55E-20	0.919	31045.000	2.23E-20	2.11E-20	0.990
30500.000	1.21E-20	1.05E-20	0.869	30505.000	1.81E-20	1.64E-20	0.907	31050.000	2.16E-20	2.21E-20	0.922
30505.000	1.05E-20	9.31E-21	0.887	30510.000	1.79E-20	1.65E-20	0.922	31055.000	1.92E-20	2.16E-20	1.124
30510.000	1.05E-20	8.32E-21	1.000	30515.000	1.78E-20	1.68E-20	0.959	31060.000	1.95E-20	1.88E-20	1.113
30515.000	7.27E-21	6.69E-21	0.920	30520.000	1.79E-20	1.32E-20	1.50E-20	31065.000	1.78E-20	1.54E-20	1.072
30520.000	7.07E-21	5.97E-21	0.845	30525.000	1.77E-20	1.17E-20	1.08E-20	31070.000	1.80E-20	1.25E-20	1.072

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	RATIO												
31075.000	1.19E-20	1.28E-20	1.073	31350.000	1.81E-20	2.02E-20	1.117	31625.000	3.34E-20	3.50E-20	1.048	31880.000	3.34E-20	3.50E-20	1.048
31080.000	1.16E-20	1.21E-20	1.042	31355.000	1.85E-20	2.06E-20	1.111	31630.000	3.37E-20	3.61E-20	1.070	31885.000	3.37E-20	3.61E-20	1.070
31085.000	1.18E-20	1.18E-20	1.003	31360.000	1.90E-20	2.06E-20	1.084	31635.000	3.45E-20	3.78E-20	1.095	31890.000	3.57E-20	3.87E-20	1.084
31090.000	1.20E-20	1.20E-20	0.998	31365.000	1.94E-20	2.14E-20	1.105	31640.000	3.57E-20	3.72E-20	1.097	31895.000	3.72E-20	3.93E-20	1.058
31095.000	1.23E-20	1.22E-20	0.996	31370.000	1.96E-20	2.15E-20	1.097	31645.000	3.72E-20	3.72E-20	1.097	31898.000	3.72E-20	3.93E-20	1.058
31100.000	1.24E-20	1.23E-20	0.995	31375.000	2.01E-20	2.10E-20	1.046	31650.000	3.83E-20	4.09E-20	1.068	31900.000	3.83E-20	4.09E-20	1.068
31105.000	1.25E-20	1.26E-20	1.006	31380.000	2.00E-20	2.15E-20	1.076	31655.000	3.96E-20	4.22E-20	1.065	31905.000	3.96E-20	4.22E-20	1.065
31110.000	1.23E-20	1.27E-20	1.030	31385.000	2.01E-20	2.28E-20	1.136	31660.000	4.10E-20	4.39E-20	1.071	31910.000	4.10E-20	4.39E-20	1.071
31115.000	1.20E-20	1.24E-20	1.037	31390.000	2.01E-20	2.29E-20	1.138	31665.000	4.20E-20	4.40E-20	1.047	31915.000	4.20E-20	4.40E-20	1.047
31120.000	1.18E-20	1.22E-20	1.036	31395.000	2.10E-20	2.35E-20	1.120	31670.000	4.34E-20	4.44E-20	1.023	31920.000	4.34E-20	4.44E-20	1.023
31125.000	1.15E-20	1.20E-20	1.044	31400.000	2.14E-20	2.42E-20	1.132	31675.000	4.48E-20	4.58E-20	1.023	31925.000	4.48E-20	4.58E-20	1.023
31130.000	1.13E-20	1.17E-20	1.032	31405.000	2.18E-20	2.59E-20	1.134	31680.000	4.60E-20	4.68E-20	1.017	31930.000	4.60E-20	4.68E-20	1.017
31135.000	1.12E-20	1.15E-20	1.028	31410.000	2.36E-20	2.73E-20	1.159	31685.000	4.63E-20	4.57E-20	0.988	31935.000	4.63E-20	4.57E-20	0.988
31140.000	1.12E-20	1.15E-20	1.031	31415.000	2.48E-20	2.82E-20	1.137	31690.000	4.59E-20	4.43E-20	0.964	31940.000	4.59E-20	4.43E-20	0.964
31145.000	1.16E-20	1.16E-20	0.997	31420.000	2.57E-20	2.89E-20	1.125	31695.000	4.77E-20	4.27E-20	0.954	31945.000	4.77E-20	4.27E-20	0.954
31150.000	1.20E-20	1.18E-20	0.985	31425.000	2.72E-20	2.92E-20	1.074	31700.000	4.75E-20	4.08E-20	0.960	31950.000	4.75E-20	4.08E-20	0.960
31155.000	1.26E-20	1.23E-20	0.979	31430.000	2.83E-20	2.93E-20	1.035	31705.000	4.76E-20	3.98E-20	0.977	31955.000	4.76E-20	3.98E-20	0.977
31160.000	1.35E-20	1.30E-20	0.965	31435.000	2.82E-20	2.97E-20	1.051	31710.000	4.93E-20	3.83E-20	0.976	31960.000	4.93E-20	3.83E-20	0.976
31165.000	1.40E-20	1.39E-20	0.992	31440.000	2.77E-20	3.07E-20	1.110	31715.000	3.85E-20	3.84E-20	0.998	31965.000	3.85E-20	3.84E-20	0.998
31170.000	1.48E-20	1.45E-20	0.978	31445.000	2.84E-20	3.19E-20	1.122	31720.000	3.86E-20	3.86E-20	1.015	31970.000	3.86E-20	3.86E-20	1.015
31175.000	1.58E-20	1.52E-20	0.959	31450.000	2.91E-20	3.31E-20	1.139	31725.000	3.81E-20	3.87E-20	1.016	31975.000	3.81E-20	3.87E-20	1.016
31180.000	1.66E-20	1.61E-20	0.970	31455.000	3.06E-20	3.44E-20	1.125	31730.000	3.77E-20	4.00E-20	1.061	31980.000	3.77E-20	4.00E-20	1.061
31185.000	1.72E-20	1.70E-20	0.991	31460.000	3.22E-26	3.60E-20	1.118	31735.000	3.93E-20	4.06E-20	1.060	31985.000	3.93E-20	4.06E-20	1.060
31190.000	1.77E-20	1.77E-20	0.999	31465.000	3.34E-20	3.66E-20	1.096	31740.000	3.97E-20	4.02E-20	1.042	31990.000	3.97E-20	4.02E-20	1.042
31195.000	1.74E-20	1.81E-20	1.038	31470.000	3.48E-20	3.63E-20	1.042	31745.000	3.90E-20	4.00E-20	1.027	31995.000	3.90E-20	4.00E-20	1.027
31200.000	1.79E-20	1.81E-20	1.013	31475.000	3.50E-20	3.55E-20	1.013	31750.000	3.95E-20	4.01E-20	1.014	32000.000	3.95E-20	4.01E-20	1.014
31205.000	1.86E-20	1.84E-20	0.989	31480.000	3.56E-20	3.33E-20	0.936	31755.000	3.96E-20	3.95E-20	0.998	32005.000	3.96E-20	3.95E-20	0.998
31210.000	1.99E-20	1.95E-20	0.981	31485.000	3.44E-20	3.16E-20	0.917	31760.000	3.90E-20	3.97E-20	1.018	32010.000	3.90E-20	3.97E-20	1.018
31215.000	2.10E-20	2.07E-20	0.986	31490.000	3.16E-20	3.05E-20	0.966	31765.000	3.87E-20	3.90E-20	1.009	32015.000	3.87E-20	3.90E-20	1.009
31220.000	2.26E-20	2.18E-20	0.963	31495.000	3.00E-20	3.07E-20	1.024	31770.000	3.82E-20	3.86E-20	1.011	32020.000	3.82E-20	3.86E-20	1.011
31225.000	2.39E-20	2.28E-20	0.955	31500.000	2.92E-20	3.13E-20	1.072	31775.000	3.79E-20	3.83E-20	1.011	32025.000	3.79E-20	3.83E-20	1.011
31230.000	2.56E-20	2.46E-20	0.962	31505.000	2.96E-20	3.20E-20	1.080	31780.000	3.77E-20	3.85E-20	1.021	32030.000	3.77E-20	3.85E-20	1.021
31235.000	2.70E-20	2.62E-20	0.969	31510.000	3.02E-20	3.22E-20	1.066	31785.000	3.80E-20	3.94E-20	1.038	32035.000	3.80E-20	3.94E-20	1.038
31240.000	2.79E-20	2.74E-20	0.980	31515.000	3.11E-20	3.19E-20	1.025	31790.000	3.86E-20	4.00E-20	1.035	32040.000	3.86E-20	4.00E-20	1.035
31245.000	2.81E-20	2.45E-20	0.874	31520.000	3.16E-20	3.22E-20	1.019	31795.000	3.95E-20	4.13E-20	1.045	32045.000	3.95E-20	4.13E-20	1.045
31250.000	2.64E-20	2.33E-20	0.882	31525.000	3.21E-20	3.28E-20	1.022	31800.000	4.08E-20	4.28E-20	1.048	32050.000	4.08E-20	4.28E-20	1.048
31255.000	2.34E-20	2.35E-20	1.006	31530.000	3.21E-20	3.22E-20	1.005	31805.000	4.15E-20	4.34E-20	1.046	32055.000	4.15E-20	4.34E-20	1.046
31260.000	2.25E-20	2.43E-20	1.081	31535.000	3.19E-20	3.19E-20	1.071	31810.000	4.32E-20	4.44E-20	1.028	32060.000	4.32E-20	4.44E-20	1.028
31265.000	2.25E-20	2.44E-20	1.082	31540.000	3.11E-20	3.02E-20	0.971	31815.000	4.43E-20	4.60E-20	1.039	32065.000	4.43E-20	4.60E-20	1.039
31270.000	2.25E-20	2.52E-20	1.119	31545.000	2.99E-20	2.90E-20	0.971	31820.000	4.48E-20	4.74E-20	1.059	32070.000	4.48E-20	4.74E-20	1.059
31275.000	2.36E-20	2.64E-20	1.117	31550.000	2.87E-20	2.81E-20	0.979	31825.000	4.62E-20	4.86E-20	1.053	32075.000	4.62E-20	4.86E-20	1.053
31280.000	2.47E-20	2.68E-20	0.882	31555.000	2.77E-20	2.86E-20	1.032	31830.000	5.03E-20	5.34E-20	1.062	32080.000	5.03E-20	5.34E-20	1.062
31285.000	2.48E-20	2.61E-20	1.051	31560.000	2.71E-20	2.90E-20	1.069	31835.000	5.13E-20	5.44E-20	1.061	32085.000	5.13E-20	5.44E-20	1.061
31315.000	1.94E-20	1.77E-20	0.973	31565.000	2.73E-20	2.94E-20	1.078	31840.000	5.14E-20	5.45E-20	1.032	32090.000	5.14E-20	5.45E-20	1.032
31290.000	2.57E-20	2.50E-20	0.973	31570.000	2.97E-20	2.97E-20	1.070	31845.000	5.07E-20	5.19E-20	1.023	32095.000	5.07E-20	5.19E-20	1.023
31295.000	2.61E-20	2.50E-20	0.956	31575.000	2.84E-20	3.03E-20	1.066	31850.000	5.16E-20	5.22E-20	1.011	32100.000	5.16E-20	5.22E-20	1.011
31325.000	2.55E-20	2.34E-20	0.871	31580.000	2.90E-20	3.14E-20	1.083	31855.000	5.25E-20	5.39E-20	1.026	32105.000	5.25E-20	5.39E-20	1.026
31330.000	1.70E-20	1.85E-20	1.086	31585.000	2.97E-20	3.21E-20	1.081	31860.000	5.34E-20	5.58E-20	1.044	32110.000	5.34E-20	5.58E-20	1.044
31335.000	1.70E-20	1.86E-20	1.094	31590.000	3.04E-20	3.23E-20	1.064	31865.000	5.47E-20	5.64E-20	1.032	32115.000	5.47E-20	5.64E-20	1.032
31340.000	1.71E-20	1.31E-20	1.054	31595.000	3.13E-20	3.23E-20	1.032	31870.000	5.60E-20	5.65E-20	1.028	32120.000	5.60E-20	5.65E-20	1.028
31345.000	1.73E-20	1.79E-20	1.033	31600.000	3.17E-20	3.32E-20	1.049	31875.000	5.69E-20	5.74E-20	1.008	32125.000	5.69E-20	5.74E-20	1.008
31350.000	2.39E-20	2.04E-20	0.882	31580.000	2.06E-20	2.06E-20	1.111	31630.000	3.37E-20	3.78E-20	1.070	32130.000	3.37E-20	3.78E-20	1.070
31355.000	2.16E-20	1.85E-20	0.858	31585.000	2.01E-20	2.10E-20	1.097	31640.000	3.57E-20	3.93E-20	1.058	32135.000	3.57E-20	3.93E-20	1.058
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Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	Ratio																
31900.000	5.76E-20	5.83E-20	1.012	32275.000	7.75E-20	7.81E-20	1.008	32450.000	1.15E-19	1.15E-19	0.998	32725.000	1.15E-19	1.15E-19	0.995	32900.000	1.15E-19	1.14E-19	0.995
31905.000	5.71E-20	5.64E-20	0.987	32280.000	7.77E-20	7.83E-20	1.007	32455.000	1.15E-19	1.15E-19	0.995	32730.000	1.15E-19	1.14E-19	0.995	32905.000	1.15E-19	1.14E-19	0.995
31910.000	5.57E-20	5.52E-20	0.991	32285.000	7.80E-20	7.83E-20	1.004	32460.000	1.15E-19	1.15E-19	0.995	32735.000	1.15E-19	1.14E-19	0.992	32910.000	1.15E-19	1.14E-19	0.992
31915.000	5.38E-20	5.38E-20	1.000	32290.000	7.80E-20	7.88E-20	1.011	32465.000	1.15E-19	1.15E-19	0.995	32740.000	1.15E-19	1.14E-19	0.990	32915.000	1.15E-19	1.14E-19	0.990
31920.000	5.29E-20	5.36E-20	1.013	32295.000	7.87E-20	7.98E-20	1.014	32470.000	1.15E-19	1.15E-19	0.990	32745.000	1.15E-19	1.14E-19	0.990	32920.000	1.15E-19	1.14E-19	0.990
31925.000	5.25E-20	5.39E-20	1.026	32300.000	7.93E-20	8.01E-20	1.010	32475.000	1.14E-19	1.14E-19	0.997	32750.000	1.14E-19	1.13E-19	0.994	32925.000	1.14E-19	1.13E-19	0.994
31930.000	5.27E-20	5.48E-20	1.039	32305.000	8.09E-20	8.11E-20	1.002	32480.000	1.14E-19	1.14E-19	0.994	32755.000	1.14E-19	1.13E-19	0.994	32930.000	1.14E-19	1.13E-19	0.994
31935.000	5.28E-20	5.38E-20	1.020	32310.000	8.23E-20	8.30E-20	1.008	32485.000	1.13E-19	1.12E-19	0.995	32760.000	1.13E-19	1.12E-19	0.995	32935.000	1.13E-19	1.12E-19	0.995
31940.000	5.34E-20	5.25E-20	0.984	32315.000	8.26E-20	8.33E-20	1.009	32490.000	1.12E-19	1.12E-19	1.005	32765.000	1.12E-19	1.11E-19	1.005	32940.000	1.12E-19	1.11E-19	1.005
31945.000	5.36E-20	5.10E-20	1.007	32320.000	8.35E-20	8.35E-20	1.000	32495.000	1.12E-19	1.12E-19	0.992	32770.000	1.12E-19	1.11E-19	0.985	32945.000	1.12E-19	1.11E-19	0.985
31950.000	5.37E-20	5.42E-20	1.009	32325.000	8.37E-20	8.36E-20	0.999	32500.000	1.13E-19	1.11E-19	0.985	32775.000	1.13E-19	1.11E-19	0.985	32950.000	1.13E-19	1.11E-19	0.985
31955.000	5.36E-20	5.48E-20	1.022	32330.000	8.29E-20	8.26E-20	1.000	32505.000	1.14E-19	1.12E-19	0.983	32780.000	1.14E-19	1.12E-19	0.983	32955.000	1.14E-19	1.12E-19	0.983
31960.000	5.32E-20	5.39E-20	1.013	32335.000	8.18E-20	8.16E-20	1.010	32510.000	1.13E-19	1.13E-19	1.004	32785.000	1.13E-19	1.13E-19	1.004	32960.000	1.13E-19	1.13E-19	1.004
31965.000	5.35E-20	5.52E-20	1.031	32340.000	8.16E-20	8.22E-20	1.007	32515.000	1.12E-19	1.14E-19	1.002	32790.000	1.12E-19	1.14E-19	1.002	32965.000	1.12E-19	1.14E-19	1.002
31970.000	5.38E-20	5.51E-20	1.025	32345.000	8.05E-20	8.16E-20	1.014	32520.000	1.15E-19	1.15E-19	0.996	32795.000	1.15E-19	1.15E-19	0.996	32970.000	1.15E-19	1.15E-19	0.996
31975.000	5.44E-20	5.50E-20	1.012	32350.000	8.12E-20	8.11E-20	0.999	32525.000	1.18E-19	1.16E-19	0.981	32800.000	1.18E-19	1.16E-19	0.981	32975.000	1.18E-19	1.16E-19	0.981
31980.000	5.48E-20	5.55E-20	1.013	32355.000	8.21E-20	8.21E-20	1.000	32530.000	1.18E-19	1.17E-19	0.995	32805.000	1.18E-19	1.17E-19	0.995	32980.000	1.18E-19	1.17E-19	0.995
31985.000	5.51E-20	5.59E-20	1.015	32360.000	8.09E-20	8.24E-20	1.018	32535.000	1.19E-19	1.18E-19	0.993	32810.000	1.19E-19	1.18E-19	0.993	32985.000	1.19E-19	1.18E-19	0.993
31990.000	5.60E-20	5.71E-20	1.020	32365.000	8.16E-20	8.22E-20	1.008	32540.000	1.21E-19	1.19E-19	0.985	32815.000	1.21E-19	1.19E-19	0.985	32990.000	1.21E-19	1.19E-19	0.985
31995.000	5.64E-20	5.74E-20	1.018	32370.000	8.24E-20	8.23E-20	0.999	32545.000	1.22E-19	1.21E-19	0.990	32820.000	1.22E-19	1.21E-19	0.990	32995.000	1.22E-19	1.21E-19	0.990
32000.000	5.73E-20	5.80E-20	1.012	32375.000	8.17E-20	8.30E-20	1.017	32550.000	1.23E-19	1.22E-19	0.990	32825.000	1.23E-19	1.22E-19	0.990	33000.000	1.23E-19	1.22E-19	0.990
32005.000	5.80E-20	5.92E-20	1.021	32380.000	8.18E-20	8.27E-20	1.011	32555.000	1.25E-19	1.23E-19	0.988	32830.000	1.25E-19	1.23E-19	0.988	33005.000	1.25E-19	1.23E-19	0.988
32010.000	5.90E-20	6.02E-20	1.020	32385.000	8.29E-20	8.32E-20	1.004	32560.000	1.26E-19	1.26E-19	0.986	32835.000	1.26E-19	1.26E-19	0.986	33010.000	1.26E-19	1.26E-19	0.986
32015.000	5.94E-20	6.09E-20	1.026	32390.000	8.42E-20	8.36E-20	1.002	32565.000	1.29E-19	1.28E-19	0.995	32840.000	1.29E-19	1.28E-19	0.995	33015.000	1.29E-19	1.28E-19	0.995
32020.000	5.99E-20	6.16E-20	1.028	32395.000	8.43E-20	8.57E-20	1.017	32570.000	1.31E-19	1.30E-19	0.990	32845.000	1.31E-19	1.30E-19	0.990	33020.000	1.31E-19	1.30E-19	0.990
32025.000	6.08E-20	6.08E-20	1.005	32400.000	8.63E-20	8.75E-20	1.014	32575.000	1.32E-19	1.31E-19	0.974	32850.000	1.32E-19	1.31E-19	0.974	33025.000	1.32E-19	1.31E-19	0.974
32030.000	6.01E-20	6.16E-20	1.029	32405.000	8.84E-20	8.84E-20	1.000	32580.000	1.34E-19	1.34E-19	0.987	32855.000	1.34E-19	1.34E-19	0.987	33030.000	1.34E-19	1.34E-19	0.987
32035.000	6.08E-20	6.21E-20	1.021	32410.000	8.98E-20	8.98E-20	1.000	32585.000	1.37E-19	1.37E-19	0.988	32860.000	1.37E-19	1.37E-19	0.988	33035.000	1.37E-19	1.37E-19	0.988
32040.000	6.17E-20	6.23E-20	1.010	32415.000	9.31E-20	9.33E-20	1.002	32590.000	1.37E-19	1.37E-19	1.001	32865.000	1.37E-19	1.37E-19	1.001	33040.000	1.37E-19	1.37E-19	1.001
32045.000	6.24E-20	6.35E-20	1.017	32420.000	9.63E-20	9.62E-20	0.999	32595.000	1.38E-19	1.38E-19	1.001	32870.000	1.38E-19	1.38E-19	1.001	33045.000	1.38E-19	1.38E-19	1.001
32050.000	6.35E-20	6.44E-20	1.014	32425.000	9.76E-20	9.72E-20	0.996	32600.000	1.39E-19	1.39E-19	1.000	32875.000	1.39E-19	1.39E-19	1.000	33050.000	1.39E-19	1.39E-19	1.000
32055.000	6.40E-20	6.48E-20	1.012	32430.000	9.82E-20	9.83E-20	1.000	32605.000	1.40E-19	1.40E-19	0.998	32880.000	1.40E-19	1.40E-19	0.998	33055.000	1.40E-19	1.40E-19	0.998
32060.000	6.52E-20	6.56E-20	1.006	32435.000	9.94E-20	9.91E-20	0.997	32610.000	1.41E-19	1.41E-19	1.004	32885.000	1.41E-19	1.41E-19	1.004	33060.000	1.41E-19	1.41E-19	1.004
32065.000	6.61E-20	6.72E-20	1.017	32440.000	1.00E-19	1.00E-19	1.004	32615.000	1.42E-19	1.42E-19	0.998	32890.000	1.42E-19	1.42E-19	0.998	33065.000	1.42E-19	1.42E-19	0.998
32070.000	6.74E-20	6.91E-20	1.026	32445.000	1.02E-19	1.02E-19	1.000	32620.000	1.43E-19	1.43E-19	0.999	32895.000	1.43E-19	1.43E-19	0.999	33070.000	1.43E-19	1.43E-19	0.999
32075.000	6.90E-20	7.04E-20	1.020	32450.000	1.03E-19	1.03E-19	1.003	32625.000	1.44E-19	1.44E-19	1.000	32900.000	1.44E-19	1.44E-19	1.000	33075.000	1.44E-19	1.44E-19	1.000
32080.000	7.01E-20	7.13E-20	1.017	32455.000	1.04E-19	1.04E-19	0.999	32630.000	1.45E-19	1.45E-19	1.000	32905.000	1.45E-19	1.45E-19	1.000	33080.000	1.45E-19	1.45E-19	1.000
32085.000	7.22E-20	7.24E-20	1.008	32460.000	1.05E-19	1.07E-19	1.012	32635.000	1.50E-19	1.50E-19	0.999	32910.000	1.50E-19	1.50E-19	1.000	33085.000	1.50E-19	1.50E-19	1.000
32090.000	7.34E-20	7.42E-20	1.011	32465.000	1.05E-19	1.07E-19	1.007	32640.000	1.51E-19	1.51E-19	1.005	32915.000	1.51E-19	1.51E-19	1.005	33090.000	1.51E-19	1.51E-19	1.005
32095.000	7.42E-20	7.52E-20	1.013	32470.000	1.05E-19	1.07E-19	1.005	32645.000	1.52E-19	1.52E-19	1.000	32920.000	1.52E-19	1.52E-19	1.000	33095.000	1.52E-19	1.52E-19	1.000
32100.000	7.52E-20	7.57E-20	1.007	32475.000	1.06E-19	1.07E-19	1.010	32650.000	1.53E-19	1.53E-19	1.000	32925.000	1.53E-19	1.53E-19	1.000	33100.000	1.53E-19	1.53E-19	1.000
32105.000	7.64E-20	7.69E-20	1.001	32480.000	1.06E-19	1.06E-19	1.003	32655.000	1.54E-19	1.54E-19	1.000	32930.000	1.54E-19	1.54E-19	1.000	33105.000	1.54E-19	1.54E-19	1.000
32110.000	7.59E-20	7.65E-20	1.011	32485.000	1.06E-19	1.07													

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
32725.000	1.53E-19	1.54E-19	1.009	33000.000	2.18E-19	2.21E-19	1.013	33275.000	3.24E-19	3.28E-19	1.012
32730.000	1.52E-19	1.56E-19	1.027	33005.000	2.21E-19	2.23E-19	1.009	33280.000	3.29E-19	3.26E-19	0.996
32735.000	1.55E-19	1.56E-19	1.003	33010.000	2.24E-19	2.25E-19	1.004	33285.000	3.23E-19	3.29E-19	1.020
32740.000	1.54E-19	1.55E-19	1.008	33015.000	2.26E-19	2.29E-19	1.011	33290.000	3.32E-19	3.31E-19	0.998
32745.000	1.56E-19	1.57E-19	1.009	33020.000	2.28E-19	2.31E-19	1.019	33295.000	3.30E-19	3.33E-19	1.010
32750.000	1.56E-19	1.58E-19	1.012	33025.000	2.32E-19	2.35E-19	1.004	33300.000	3.35E-19	3.34E-19	0.993
32755.000	1.59E-19	1.58E-19	0.995	33030.000	2.34E-19	2.35E-19	1.003	33305.000	3.35E-19	3.38E-19	1.008
32760.000	1.61E-19	1.60E-19	0.994	33035.000	2.36E-19	2.37E-19	1.006	33310.000	3.36E-19	3.40E-19	1.012
32765.000	1.64E-19	1.62E-19	0.986	33040.000	2.40E-19	2.42E-19	1.001	33315.000	3.42E-19	3.42E-19	1.000
32770.000	1.63E-19	1.63E-19	1.002	33045.000	2.43E-19	2.44E-19	0.997	33320.000	3.49E-19	3.44E-19	1.015
32775.000	1.65E-19	1.65E-19	0.998	33050.000	2.43E-19	2.44E-19	1.004	33325.000	3.47E-19	3.46E-19	0.996
32780.000	1.67E-19	1.66E-19	0.996	33055.000	2.45E-19	2.46E-19	1.005	33330.000	3.47E-19	3.50E-19	1.007
32785.000	1.68E-19	1.68E-19	0.998	33060.000	2.47E-19	2.49E-19	1.006	33335.000	3.48E-19	3.50E-19	1.006
32790.000	1.72E-19	1.69E-19	0.981	33065.000	2.51E-19	2.52E-19	1.003	33340.000	3.44E-19	0.982	
32795.000	1.74E-19	1.71E-19	0.980	33070.000	2.53E-19	2.53E-19	1.000	33345.000	3.48E-19	3.47E-19	0.997
32800.000	1.75E-19	1.73E-19	0.983	33075.000	2.56E-19	2.56E-19	0.999	33350.000	3.47E-19	3.53E-19	1.016
32805.000	1.76E-19	1.76E-19	1.004	33080.000	2.57E-19	2.56E-19	0.997	33355.000	3.52E-19	3.55E-19	1.008
32810.000	1.79E-19	1.78E-19	0.996	33085.000	2.58E-19	2.59E-19	1.002	33360.000	3.54E-19	3.55E-19	1.002
32815.000	1.80E-19	1.80E-19	0.997	33090.000	2.60E-19	2.60E-19	1.001	33365.000	3.55E-19	3.57E-19	1.005
32820.000	1.84E-19	1.84E-19	1.001	33095.000	2.62E-19	2.62E-19	0.999	33370.000	3.55E-19	3.62E-19	1.019
32825.000	1.87E-19	1.86E-19	0.994	33100.000	2.63E-19	2.63E-19	1.002	33375.000	3.57E-19	3.64E-19	1.021
32830.000	1.87E-19	1.87E-19	1.003	33105.000	2.65E-19	2.65E-19	1.000	33380.000	3.61E-19	3.63E-19	1.006
32835.000	1.89E-19	1.89E-19	1.000	33110.000	2.67E-19	2.66E-19	0.996	33385.000	3.67E-19	3.69E-19	1.008
32840.000	1.90E-19	1.90E-19	1.002	33115.000	2.66E-19	2.67E-19	1.005	33390.000	3.68E-19	3.68E-19	1.003
32845.000	1.90E-19	1.91E-19	1.007	33120.000	2.67E-19	2.69E-19	1.008	33395.000	3.73E-19	3.75E-19	1.005
32850.000	1.92E-19	1.93E-19	1.003	33125.000	2.68E-19	2.70E-19	1.006	33400.000	3.78E-19	3.81E-19	1.017
32855.000	1.94E-19	1.94E-19	1.000	33130.000	2.68E-19	2.68E-19	1.002	33405.000	3.78E-19	3.87E-19	1.025
32860.000	1.95E-19	1.95E-19	1.002	33135.000	2.69E-19	2.70E-19	1.002	33410.000	3.81E-19	3.88E-19	1.018
32865.000	1.97E-19	1.97E-19	1.000	33140.000	2.69E-19	2.70E-19	1.004	33415.000	3.88E-19	3.89E-19	1.002
32870.000	1.97E-19	1.99E-19	1.012	33145.000	2.70E-19	2.70E-19	1.000	33420.000	3.88E-19	3.91E-19	1.009
32875.000	2.01E-19	2.02E-19	1.007	33150.000	2.70E-19	2.70E-19	1.002	33425.000	3.93E-19	3.94E-19	1.003
32880.000	2.03E-19	2.03E-19	1.000	33155.000	2.72E-19	2.71E-19	0.997	33430.000	4.00E-19	4.04E-19	1.011
32885.000	2.05E-19	2.04E-19	0.997	33160.000	2.74E-19	2.72E-19	0.994	33435.000	4.03E-19	4.10E-19	1.016
32889.000	2.05E-19	2.07E-19	1.008	33165.000	2.75E-19	2.73E-19	0.994	33440.000	4.07E-19	4.02E-19	0.988
32895.000	2.05E-19	2.06E-19	1.004	33170.000	2.75E-19	2.75E-19	1.000	33445.000	4.10E-19	4.09E-19	0.997
32899.000	2.04E-19	2.06E-19	1.008	33175.000	2.78E-19	2.77E-19	0.998	33450.000	4.11E-19	4.16E-19	1.011
32905.000	2.03E-19	2.03E-19	1.009	33180.000	2.79E-19	2.79E-19	1.000	33455.000	4.15E-19	4.18E-19	1.008
32910.000	2.04E-19	2.05E-19	1.005	33185.000	2.82E-19	2.81E-19	0.997	33460.000	4.18E-19	4.19E-19	1.002
32915.000	2.03E-19	2.05E-19	1.012	33190.000	2.84E-19	2.83E-19	0.995	33465.000	4.19E-19	4.19E-19	1.008
32920.000	2.04E-19	2.06E-19	1.010	33195.000	2.84E-19	2.84E-19	1.001	33470.000	4.20E-19	4.20E-19	1.009
32925.000	2.03E-19	2.07E-19	1.017	33200.000	2.87E-19	2.86E-19	1.000	33475.000	4.20E-19	4.21E-19	1.003
32930.000	2.05E-19	2.09E-19	1.007	33205.000	2.91E-19	2.90E-19	0.996	33480.000	4.26E-19	4.26E-19	1.005
32935.000	2.07E-19	2.06E-19	0.998	33210.000	2.96E-19	2.93E-19	0.990	33485.000	4.20E-19	4.28E-19	1.018
32940.000	2.06E-19	2.08E-19	1.012	33215.000	2.97E-19	2.96E-19	0.995	33490.000	4.25E-19	4.35E-19	1.009
32945.000	2.07E-19	2.10E-19	1.013	33220.000	3.02E-19	2.99E-19	0.991	33495.070	4.25E-19	4.36E-19	1.013
32950.000	2.06E-19	2.06E-19	1.022	33225.000	3.07E-19	3.03E-19	0.987	33500.000	4.26E-19	4.30E-19	1.010
32955.000	2.09E-19	2.11E-19	1.017	33230.000	3.09E-19	3.06E-19	0.991	33505.070	4.21E-19	4.33E-19	1.005
32960.000	2.09E-19	2.12E-19	1.011	33235.000	3.12E-19	3.07E-19	0.985	33510.000	4.34E-19	4.37E-19	1.006
32965.000	2.10E-19	2.13E-19	1.012	33240.000	3.12E-19	3.12E-19	1.002	33515.000	4.35E-19	4.39E-19	1.009
32970.000	2.11E-19	2.14E-19	1.014	33245.000	3.19E-19	3.15E-19	0.989	33520.000	4.36E-19	4.41E-19	1.013
32975.000	2.13E-19	2.15E-19	1.008	33250.000	3.21E-19	3.18E-19	0.989	33525.000	4.39E-19	4.45E-19	1.014
32980.000	2.14E-19	2.15E-19	1.006	33255.000	3.20E-19	3.21E-19	1.003	33530.000	4.41E-19	4.43E-19	1.006
32985.000	2.12E-19	2.17E-19	1.022	33260.000	3.23E-19	3.24E-19	1.004	33535.000	4.40E-19	4.42E-19	1.005
32990.000	2.17E-19	2.18E-19	1.006	33265.000	3.25E-19	3.27E-19	1.011	33540.000	4.45E-19	4.44E-19	1.007
32995.000	2.16E-19	2.20E-19	1.017	33270.000	3.25E-19	3.27E-19	1.008	33545.000	4.46E-19	4.48E-19	1.004

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

(7)

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
33550.000	4.52E-19	4.52E-19	1.000	33825.000	6.21E-19	6.28E-19	1.010	34100.000	6.72E-19	8.76E-19	1.005
33555.000	4.54E-19	4.55E-19	1.001	33830.000	6.28E-19	6.32E-19	1.006	34105.000	8.79E-19	8.87E-19	1.009
33560.000	4.56E-19	4.57E-19	1.002	33835.000	6.29E-19	6.34E-19	1.008	34110.000	8.85E-19	8.97E-19	1.014
33565.000	4.57E-19	4.61E-19	1.009	33840.000	6.35E-19	6.38E-19	1.005	34115.000	8.90E-19	9.01E-19	1.012
33570.000	4.59E-19	4.67E-19	1.016	33845.000	6.41E-19	6.41E-19	0.998	34120.000	9.96E-19	9.98E-19	1.002
33575.000	4.71E-19	4.66E-19	0.989	33850.000	6.48E-19	6.47E-19	0.999	34125.000	9.07E-19	9.11E-19	1.004
33580.000	4.70E-19	4.67E-19	0.994	33855.000	6.52E-19	6.59E-19	1.011	34130.000	9.18E-19	9.15E-19	0.997
33585.000	4.70E-19	4.74E-19	1.009	33860.000	6.61E-19	6.70E-19	1.011	34135.000	9.23E-19	9.26E-19	1.203
33590.000	4.77E-19	4.78E-19	1.003	33865.000	6.68E-19	6.73E-19	1.007	34140.000	9.26E-19	9.36E-19	1.010
33595.000	4.79E-19	4.79E-19	1.001	33870.000	6.69E-19	6.72E-19	1.004	34145.000	9.33E-19	9.44E-19	1.012
33600.000	4.83E-19	4.83E-19	0.999	33875.000	6.79E-19	6.83E-19	1.005	34150.000	9.36E-19	9.48E-19	1.013
33605.000	4.89E-19	4.87E-19	0.995	33880.000	6.81E-19	6.89E-19	1.012	34155.000	9.42E-19	9.49E-19	1.008
33610.000	4.88E-19	4.90E-19	1.005	33885.000	6.89E-19	6.96E-19	1.002	34160.000	9.46E-19	9.57E-19	1.011
33615.000	4.93E-19	4.98E-19	1.011	33890.000	7.00E-19	7.02E-19	1.002	34165.000	9.50E-19	9.60E-19	1.011
33620.000	4.96E-19	5.02E-19	1.012	33895.000	7.02E-19	7.03E-19	1.002	34170.000	9.51E-19	9.61E-19	1.011
33625.000	4.98E-19	5.06E-19	1.016	33900.000	7.02E-19	7.05E-19	1.004	34175.000	9.54E-19	9.62E-19	1.009
33630.000	5.03E-19	5.09E-19	1.012	33905.000	7.05E-19	7.13E-19	1.011	34180.000	9.53E-19	9.65E-19	1.013
33635.000	5.09E-19	5.09E-19	1.001	33910.000	7.10E-19	7.21E-19	1.016	34185.000	9.54E-19	9.66E-19	1.013
33640.000	5.10E-19	5.11E-19	1.001	33915.000	7.20E-19	7.24E-19	1.006	34190.000	9.51E-19	9.65E-19	1.015
33645.000	5.15E-19	5.16E-19	1.003	33920.000	7.21E-19	7.27E-19	1.009	34195.000	9.58E-19	9.68E-19	1.010
33650.000	5.18E-19	5.23E-19	1.010	33925.000	7.29E-19	7.27E-19	0.998	34200.000	9.58E-19	9.72E-19	1.014
33655.000	5.20E-19	5.27E-19	1.013	33930.000	7.30E-19	7.28E-19	1.009	34205.000	9.58E-19	9.67E-19	1.009
33660.000	5.29E-19	5.31E-19	1.003	33935.000	7.31E-19	7.34E-19	1.004	34210.000	9.68E-19	9.75E-19	1.007
33665.000	5.34E-19	5.33E-19	0.999	33940.000	7.41E-19	7.42E-19	1.001	34215.000	9.68E-19	9.80E-19	1.012
33670.000	5.37E-19	5.37E-19	1.001	33945.000	7.41E-19	7.46E-19	1.007	34220.000	9.73E-19	9.82E-19	1.009
33675.000	5.45E-19	5.48E-19	1.005	33950.000	7.50E-19	7.56E-19	1.007	34225.000	9.75E-19	9.90E-19	1.015
33680.000	5.43E-19	5.51E-19	1.015	33955.000	7.46E-19	7.53E-19	1.010	34230.000	9.87E-19	9.98E-19	1.012
33685.000	5.51E-19	5.51E-19	1.000	33960.000	7.49E-19	7.53E-19	1.006	34235.000	9.87E-19	1.00E-18	1.017
33690.000	5.52E-19	5.51E-19	0.998	33965.000	7.60E-19	7.56E-19	0.995	34240.000	9.98E-19	1.00E-18	1.004
33695.000	5.55E-19	5.54E-19	0.998	33970.000	7.58E-19	7.61E-19	1.004	34245.000	1.00E-18	1.01E-18	1.007
33700.000	5.56E-19	5.58E-19	1.004	33975.000	7.68E-19	7.81E-19	1.005	34250.000	1.01E-18	1.01E-18	1.005
33705.000	5.52E-19	5.59E-19	1.012	33980.000	7.71E-19	7.75E-19	1.006	34255.000	1.01E-18	1.02E-18	1.011
33710.000	5.54E-19	5.56E-19	1.000	33985.000	7.74E-19	7.78E-19	1.009	34260.000	1.00E-18	1.03E-18	1.026
33715.000	5.54E-19	5.56E-19	1.004	33990.000	7.71E-19	7.80E-19	1.012	34265.000	1.01E-18	1.03E-18	1.021
33720.000	5.53E-19	5.64E-19	1.017	33995.000	7.75E-19	7.81E-19	1.008	34270.000	1.02E-18	1.03E-18	1.013
33725.000	5.56E-19	5.60E-19	1.007	34000.000	7.77E-19	7.81E-19	1.005	34275.000	1.02E-18	1.04E-18	1.018
33730.000	5.56E-19	5.60E-19	1.007	34005.000	7.75E-19	7.84E-19	1.011	34280.000	1.04E-18	1.05E-18	1.006
33735.000	5.60E-19	5.56E-19	1.003	33985.000	7.71E-19	7.78E-19	1.009	34285.000	1.05E-18	1.06E-18	1.008
33740.000	5.62E-19	5.68E-19	1.011	34010.000	7.81E-19	7.86E-19	1.017	34290.000	1.06E-18	1.07E-18	1.011
33745.000	5.66E-19	5.70E-19	1.008	34020.000	7.79E-19	7.87E-19	1.010	34295.000	1.07E-18	1.07E-18	1.004
33750.000	5.66E-19	5.69E-19	1.006	34025.000	7.85E-19	7.93E-19	1.011	34300.000	1.08E-18	1.10E-18	1.001
33755.000	5.66E-19	5.75E-19	1.005	34030.000	7.93E-19	7.96E-19	1.004	34305.000	1.09E-18	1.09E-18	1.002
33760.000	5.79E-19	5.80E-19	1.003	34035.000	7.93E-19	7.96E-19	1.003	34310.000	1.09E-18	1.10E-18	1.011
33765.000	5.82E-19	5.85E-19	1.006	34040.000	7.96E-19	8.03E-19	1.009	34315.000	1.10E-18	1.11E-18	1.012
33770.000	5.93E-19	5.93E-19	1.000	34045.000	8.06E-19	8.11E-19	1.006	34320.000	1.11E-18	1.12E-18	1.012
33775.000	5.96E-19	6.02E-19	1.010	34050.000	8.14E-19	8.13E-19	0.999	34325.000	1.11E-18	1.13E-18	1.004
33780.000	6.03E-19	6.06E-19	1.005	34055.000	8.10E-19	8.16E-19	1.007	34330.000	1.13E-18	1.13E-18	1.003
33785.000	6.05E-19	6.05E-19	1.001	34060.000	8.27E-19	8.18E-19	0.989	34335.000	1.13E-18	1.14E-18	1.005
33790.000	6.08E-19	6.11E-19	1.000	34065.000	8.27E-19	8.30E-19	1.003	34340.000	1.14E-18	1.15E-18	1.005
33795.000	6.14E-19	6.18E-19	1.006	34070.000	8.32E-19	8.39E-19	1.008	34345.000	1.16E-18	1.16E-18	1.007
33800.000	6.15E-19	6.22E-19	1.011	34075.000	8.37E-19	8.48E-19	1.013	34350.000	1.16E-18	1.17E-18	1.007
33805.000	6.21E-19	6.24E-19	1.004	34080.000	8.51E-19	8.55E-19	1.005	34355.000	1.16E-18	1.17E-18	1.010
33810.000	6.16E-19	6.25E-19	1.014	34085.000	8.56E-19	8.59E-19	1.004	34360.000	1.17E-18	1.18E-18	1.008
33815.000	6.19E-19	6.25E-19	1.010	34090.000	8.58E-19	8.66E-19	1.009	34365.000	1.17E-18	1.19E-18	1.013
33820.000	6.21E-19	6.27E-19	1.009	34095.000	8.64E-19	8.77E-19	1.005	34370.000	1.18E-18	1.20E-18	1.016

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO (8)

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
34375.000	1.18E-18	1.20E-18	1.019	34650.000	1.54E-18	1.54E-18	1.001	34925.000	2.02E-18	2.06E-18	1.002
34380.000	1.20E-18	1.21E-18	1.008	34655.000	1.54E-18	1.56E-18	1.011	34930.000	2.05E-18	2.06E-18	1.007
34385.000	1.21E-18	1.21E-18	1.003	34660.000	1.55E-18	1.56E-18	1.009	34935.000	2.06E-18	2.07E-18	1.007
34390.000	1.22E-18	1.22E-18	0.996	34665.000	1.56E-18	1.57E-18	1.004	34940.000	2.08E-18	2.10E-18	1.008
34395.000	1.22E-18	1.23E-18	1.007	34670.000	1.57E-18	1.57E-18	1.001	34945.000	2.08E-18	2.11E-18	1.013
34400.000	1.22E-18	1.23E-18	1.006	34675.000	1.56E-18	1.57E-18	1.000	34950.000	2.11E-18	2.12E-18	1.003
34405.000	1.23E-18	1.24E-18	1.008	34680.000	1.57E-18	1.58E-18	1.004	34955.000	2.09E-18	2.11E-18	1.019
34410.000	1.22E-18	1.24E-18	1.019	34685.000	1.58E-18	1.58E-18	1.001	34960.000	2.12E-18	2.15E-18	1.013
34415.000	1.22E-18	1.24E-18	1.020	34690.000	1.58E-18	1.59E-18	1.005	34965.000	2.13E-18	2.14E-18	1.005
34420.000	1.25E-18	1.25E-18	1.000	34695.000	1.58E-18	1.59E-18	1.009	34970.000	2.14E-18	2.15E-18	1.003
34425.000	1.25E-18	1.26E-18	1.007	34700.000	1.60E-18	1.60E-18	1.001	34975.000	2.14E-18	2.16E-18	1.008
34430.000	1.25E-18	1.26E-18	1.012	34705.000	1.61E-18	1.60E-18	1.007	34980.000	2.15E-18	2.17E-18	1.007
34435.000	1.26E-18	1.27E-18	1.010	34710.000	1.62E-18	1.61E-18	1.004	34985.000	2.14E-18	2.16E-18	1.012
34440.000	1.26E-18	1.27E-18	1.011	34715.000	1.63E-18	1.63E-18	1.008	34990.000	2.15E-18	2.17E-18	1.010
34445.000	1.26E-18	1.28E-18	1.014	34720.000	1.62E-18	1.64E-18	1.011	34995.000	2.14E-18	2.17E-18	1.015
34450.000	1.27E-18	1.28E-18	1.011	34725.000	1.64E-18	1.64E-18	1.004	35000.000	2.11E-18	2.17E-18	1.018
34455.000	1.27E-18	1.29E-18	1.014	34730.000	1.65E-18	1.66E-18	1.004	35005.000	2.14E-18	2.16E-18	1.012
34460.000	1.29E-18	1.29E-18	1.006	34735.000	1.66E-18	1.67E-18	1.005	35010.000	2.13E-18	2.17E-18	1.017
34465.000	1.29E-18	1.30E-18	1.011	34740.000	1.67E-18	1.68E-18	1.008	35015.000	2.13E-18	2.17E-18	1.019
34470.000	1.29E-18	1.31E-18	1.017	34745.000	1.68E-18	1.69E-18	1.004	35020.000	2.14E-18	2.17E-18	1.016
34475.000	1.30E-18	1.31E-18	1.010	34750.000	1.70E-18	1.70E-18	0.999	35025.000	2.14E-18	2.18E-18	1.019
34480.000	1.30E-18	1.32E-18	1.013	34755.000	1.72E-18	1.72E-18	0.998	35030.000	2.17E-18	2.19E-18	1.008
34485.000	1.31E-18	1.32E-18	1.009	34760.000	1.74E-18	1.73E-18	0.997	35035.000	2.16E-18	2.20E-18	1.017
34490.000	1.31E-18	1.32E-18	1.011	34765.000	1.75E-18	1.75E-18	1.005	35040.000	2.16E-18	2.17E-18	1.019
34495.000	1.31E-18	1.33E-18	1.013	34770.000	1.76E-18	1.76E-18	1.005	35045.000	2.20E-18	2.22E-18	1.009
34500.000	1.32E-18	1.33E-18	1.006	34775.000	1.78E-18	1.78E-18	1.002	35050.000	2.24E-18	2.24E-18	1.007
34505.000	1.32E-18	1.33E-18	1.009	34780.000	1.80E-18	1.80E-18	0.994	35055.000	2.23E-18	2.25E-18	1.010
34510.000	1.33E-18	1.33E-18	1.007	34785.000	1.82E-18	1.82E-18	0.999	35060.000	2.25E-18	2.25E-18	1.011
34515.000	1.33E-18	1.32E-18	1.013	34790.000	1.74E-18	1.73E-18	0.997	35065.000	2.26E-18	2.26E-18	1.016
34520.000	1.31E-18	1.32E-18	1.008	34795.000	1.84E-18	1.85E-18	1.006	35070.000	2.29E-18	2.31E-18	1.007
34525.000	1.35E-18	1.35E-18	1.013	34800.000	1.85E-18	1.86E-18	1.005	35075.000	2.30E-18	2.32E-18	1.008
34530.000	1.36E-18	1.37E-18	1.012	34805.000	1.87E-18	1.87E-18	1.001	35080.000	2.31E-18	2.33E-18	1.007
34535.000	1.38E-18	1.39E-18	1.008	34810.000	1.86E-18	1.86E-18	1.012	35085.000	2.35E-18	2.33E-18	0.993
34540.000	1.34E-18	1.35E-18	1.008	34815.000	1.88E-18	1.89E-18	1.005	35090.000	2.35E-18	2.35E-18	0.998
34545.000	1.35E-18	1.36E-18	1.008	34820.000	1.88E-18	1.89E-18	1.007	35095.000	2.37E-18	2.36E-18	0.994
34550.000	1.40E-18	1.40E-18	0.997	34825.000	1.90E-18	1.89E-18	0.996	35100.000	2.36E-18	2.37E-18	1.006
34555.000	1.40E-18	1.42E-18	1.013	34830.000	1.89E-18	1.91E-18	1.009	35105.000	2.38E-18	2.39E-18	1.003
34560.000	1.42E-18	1.43E-18	1.008	34835.000	1.90E-18	1.92E-18	1.008	35110.000	2.40E-18	2.40E-18	0.998
34565.000	1.43E-18	1.43E-18	1.010	34840.000	1.92E-18	1.91E-18	1.007	35115.000	2.41E-18	2.40E-18	0.996
34570.000	1.43E-18	1.44E-18	1.007	34845.000	1.91E-18	1.91E-18	1.000	35120.000	2.41E-18	2.41E-18	0.995
34575.000	1.43E-18	1.44E-18	1.010	34850.000	1.92E-18	1.92E-18	1.002	35125.000	2.41E-18	2.46E-18	0.998
34580.000	1.44E-18	1.44E-18	1.009	34855.000	1.90E-18	1.92E-18	1.013	35130.000	2.41E-18	2.42E-18	1.004
34585.000	1.45E-18	1.45E-18	1.008	34860.000	1.92E-18	1.93E-18	1.005	35135.000	2.42E-18	2.43E-18	1.003
34590.000	1.45E-18	1.46E-18	1.011	34865.000	1.93E-18	1.93E-18	1.001	35140.000	2.45E-18	2.45E-18	0.993
34595.000	1.46E-18	1.46E-18	1.003	34870.000	1.93E-18	1.93E-18	1.002	35145.000	2.46E-18	2.46E-18	0.995
34600.000	1.47E-18	1.47E-18	1.003	34875.000	1.94E-18	1.95E-18	1.004	35150.000	2.46E-18	2.47E-18	1.002
34605.000	1.48E-18	1.48E-18	1.004	34880.000	1.95E-18	1.95E-18	1.001	35155.000	2.46E-18	2.46E-18	1.002
34610.000	1.49E-18	1.49E-18	1.002	34885.000	1.96E-18	1.97E-18	1.003	35160.000	2.46E-18	2.47E-18	1.005
34615.000	1.50E-18	1.50E-18	1.003	34890.000	1.99E-18	1.98E-18	1.006	35165.000	2.46E-18	2.48E-18	1.006
34620.000	1.50E-18	1.50E-18	1.003	34895.000	1.98E-18	1.99E-18	1.007	35170.000	2.46E-18	2.47E-18	1.006
34625.000	1.51E-18	1.51E-18	1.002	34900.000	2.00E-18	2.00E-18	1.002	35175.000	2.46E-18	2.46E-18	0.998
34630.000	1.51E-18	1.52E-18	1.007	34905.000	2.01E-18	2.01E-18	1.002	35180.000	2.49E-18	2.49E-18	0.998
34635.000	1.51E-18	1.53E-18	1.012	34910.000	2.02E-18	2.03E-18	1.004	35185.000	2.48E-18	2.49E-18	1.003
34640.000	1.52E-18	1.54E-18	1.012	34915.000	2.03E-18	2.04E-18	1.006	35190.000	2.51E-18	2.49E-18	0.992
34645.000	1.54E-18	1.54E-18	1.004	34920.000	2.03E-18	2.04E-18	1.012	35195.000	2.53E-18	2.50E-18	0.987

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

(9)

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
35200.000	2.52E-18	0.997	35475.000	3.12E-18	0.987	3.08E-18	0.987	35750.000	4.04E-18	0.993	4.01E-18
35205.000	2.54E-18	0.997	35480.000	3.15E-18	0.977	3.08E-18	0.977	35755.000	4.03E-18	0.991	4.00E-18
35210.000	2.57E-18	0.990	35485.000	3.14E-18	0.981	3.08E-18	0.981	35760.000	4.02E-18	0.996	4.00E-18
35215.000	2.60E-18	0.989	35490.000	3.15E-18	0.982	3.09E-18	0.982	35765.000	4.02E-18	0.998	4.01E-18
35220.000	2.61E-18	0.997	35495.000	3.15E-18	0.988	3.07E-18	0.988	35770.000	4.04E-18	0.996	4.03E-18
35225.000	2.64E-18	0.993	35500.000	3.19E-18	0.980	3.13E-18	0.980	35775.000	4.02E-18	1.004	4.03E-18
35230.000	2.65E-18	1.003	35505.000	3.22E-18	0.976	3.14E-18	0.976	35780.000	4.05E-18	0.997	4.04E-18
35235.000	2.70E-18	0.990	35510.000	3.21E-18	0.983	3.15E-18	0.983	35785.000	4.03E-18	1.009	4.07E-18
35240.000	2.72E-18	0.990	35515.000	3.25E-18	0.977	3.18E-18	0.977	35790.000	4.06E-18	0.998	4.06E-18
35245.000	2.77E-18	0.982	35520.000	3.28E-18	0.975	3.20E-18	0.975	35795.000	4.06E-18	1.003	4.07E-18
35250.000	2.79E-18	0.984	35525.000	3.28E-18	0.976	3.20E-18	0.976	35800.000	4.04E-18	1.004	4.09E-18
35255.000	2.79E-18	1.000	35530.000	3.31E-18	0.978	3.24E-18	0.978	35805.000	4.06E-18	1.008	4.09E-18
35260.000	2.82E-18	0.992	35535.000	3.36E-18	0.974	3.27E-18	0.974	35810.000	4.10E-18	1.009	4.10E-18
35265.000	2.83E-18	1.000	35540.000	3.40E-18	0.972	3.31E-18	0.972	35815.000	4.11E-18	1.004	4.13E-18
35270.000	2.84E-18	0.999	35545.000	3.45E-18	0.966	3.38E-18	0.966	35820.000	4.14E-18	1.000	4.14E-18
35275.000	2.88E-18	0.993	35550.000	3.45E-18	0.972	3.35E-18	0.972	35825.000	4.15E-18	0.997	4.14E-18
35280.000	2.90E-18	0.999	35555.000	3.48E-18	0.969	3.37E-18	0.969	35830.000	4.15E-18	0.997	4.15E-18
35285.000	2.91E-18	0.997	35560.000	3.49E-18	0.974	3.40E-18	0.974	35835.000	4.18E-18	1.000	4.18E-18
35290.000	2.90E-18	1.001	35565.000	3.51E-18	0.976	3.42E-18	0.976	35840.000	4.19E-18	1.004	4.21E-18
35295.000	2.89E-18	1.005	35570.000	3.53E-18	0.976	3.45E-18	0.976	35845.000	4.24E-18	0.999	4.24E-18
35300.000	2.88E-18	1.008	35575.000	3.54E-18	0.981	3.47E-18	0.981	35850.000	4.24E-18	1.010	4.28E-18
35305.000	2.89E-18	0.998	35580.000	3.54E-18	0.978	3.46E-18	0.978	35855.000	4.30E-18	0.998	4.29E-18
35310.000	2.87E-18	1.004	35585.000	3.57E-18	0.972	3.47E-18	0.972	35860.000	4.28E-18	1.002	4.29E-18
35315.000	2.88E-18	0.999	35590.000	3.54E-18	0.984	3.48E-18	0.984	35865.000	4.29E-18	0.996	4.27E-18
35320.000	2.89E-18	1.001	35595.000	3.53E-18	0.976	3.49E-18	0.976	35870.000	4.31E-18	0.990	4.31E-18
35325.000	2.87E-18	0.992	35600.000	3.57E-18	0.978	3.50E-18	0.978	35875.000	4.34E-18	0.999	4.34E-18
35330.000	2.85E-18	1.008	35605.000	3.56E-18	0.982	3.50E-18	0.982	35880.000	4.34E-18	0.999	4.34E-18
35335.000	2.88E-18	1.004	35610.000	3.58E-18	0.978	3.50E-18	0.978	35885.000	4.38E-18	0.993	4.35E-18
35340.000	2.88E-18	0.999	35615.000	3.60E-18	0.981	3.50E-18	0.981	35890.000	4.36E-18	0.999	4.37E-18
35345.000	2.87E-18	0.992	35620.000	3.58E-18	0.977	3.50E-18	0.977	35895.000	4.37E-18	1.004	4.39E-18
35350.000	2.87E-18	0.986	35625.000	3.58E-18	0.974	3.49E-18	0.974	35900.000	4.42E-18	0.999	4.42E-18
35355.000	2.99E-18	0.990	35630.000	3.57E-18	0.980	3.50E-18	0.980	35905.000	4.40E-18	1.000	4.40E-18
35360.000	2.92E-18	0.985	35635.000	3.62E-18	0.972	3.52E-18	0.972	35910.000	4.41E-18	0.987	4.42E-18
35365.000	2.92E-18	0.993	35640.000	3.59E-18	0.985	3.54E-18	0.985	35915.000	4.42E-18	1.004	4.43E-18
35370.000	2.93E-18	0.995	35645.000	3.62E-18	0.975	3.53E-18	0.975	35920.000	4.47E-18	0.993	4.44E-18
35375.000	2.91E-18	0.986	35650.000	3.58E-18	0.977	3.55E-18	0.977	35925.000	4.50E-18	1.004	4.44E-18
35380.000	2.97E-18	0.982	35655.000	3.67E-18	0.974	3.67E-18	0.974	35930.000	4.44E-18	0.998	4.43E-18
35385.000	3.00E-18	0.981	35660.000	3.64E-18	0.984	3.68E-18	0.984	35935.000	4.48E-18	1.002	4.42E-18
35390.000	3.03E-18	0.976	35665.000	3.63E-18	0.990	3.59E-18	0.990	35940.000	4.49E-18	0.987	4.43E-18
35395.000	3.00E-18	0.987	35670.000	3.68E-18	0.981	3.61E-18	0.981	35945.000	4.49E-18	0.987	4.47E-18
35400.000	3.05E-18	0.991	35675.000	3.73E-18	0.975	3.62E-18	0.975	35950.000	4.50E-18	0.992	4.44E-18
35405.000	3.07E-18	0.987	35680.000	3.75E-18	0.972	3.64E-18	0.972	35955.000	4.50E-18	0.999	4.45E-18
35410.000	3.03E-18	0.988	35685.000	3.78E-18	0.976	3.66E-18	0.976	35960.000	4.53E-18	1.004	4.46E-18
35415.000	3.09E-18	0.985	35690.000	3.83E-18	0.963	3.69E-18	0.963	35965.000	4.55E-18	1.003	4.52E-18
35420.000	3.09E-18	0.988	35695.000	3.83E-18	0.977	3.74E-18	0.977	35970.000	4.57E-18	0.987	4.51E-18
35425.000	3.10E-18	0.986	35700.000	3.88E-18	0.971	3.76E-18	0.971	35975.000	4.55E-18	1.002	4.56E-18
35430.000	3.06E-18	0.988	35705.000	3.92E-18	0.975	3.82E-18	0.975	35980.000	4.59E-18	1.007	4.62E-18
35435.000	3.11E-18	0.987	35710.000	3.91E-18	0.971	3.92E-18	0.971	35985.000	4.59E-18	1.008	4.61E-18
35440.000	3.09E-18	0.994	35715.000	3.95E-18	0.976	3.91E-18	0.976	35990.000	4.63E-18	1.004	4.65E-18
35445.000	3.10E-18	0.989	35720.000	3.96E-18	0.971	3.96E-18	0.971	35995.000	4.67E-18	1.001	4.71E-18
35450.000	3.11E-18	0.985	35725.000	3.98E-18	0.975	3.98E-18	0.975	36000.000	4.69E-18	1.001	4.69E-18
35455.000	3.10E-18	0.990	35730.000	4.00E-18	0.977	4.00E-18	0.977	36005.000	4.73E-18	1.008	4.72E-18
35460.000	3.12E-18	0.981	35735.000	4.01E-18	0.972	4.01E-18	0.972	36010.000	4.79E-18	1.002	4.75E-18
35465.000	3.14E-18	0.981	35740.000	4.04E-18	0.974	4.04E-18	0.974	36015.000	4.80E-18	0.997	4.78E-18
35470.000	3.12E-18	0.971	35745.000	4.04E-18	0.978	4.04E-18	0.978	36020.000	4.81E-18	0.998	4.80E-18

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO - Bass / HCO (10)									
Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO
36055.000	4.84E-18	4.79E-18	0.990	36300.000	5.54E-18	5.51E-18	0.994	36575.000	6.40E-18
36050.000	4.86E-18	4.79E-18	0.986	36305.000	5.55E-18	5.54E-18	0.999	36580.000	6.48E-18
36055.000	4.84E-18	4.84E-18	0.999	36310.000	5.59E-18	5.54E-18	0.996	36585.000	6.48E-18
36040.000	4.88E-18	4.84E-18	0.996	36315.000	5.59E-18	5.61E-18	1.003	36590.000	6.47E-18
36055.000	4.89E-18	4.87E-18	0.995	36320.000	5.61E-18	5.64E-18	1.005	36595.000	6.51E-18
36050.000	4.91E-18	4.87E-18	0.991	36325.000	5.65E-18	5.61E-18	0.997	36600.000	6.50E-18
36055.000	4.91E-18	4.91E-18	1.000	36330.000	5.68E-18	5.66E-18	0.996	36605.000	6.52E-18
36060.000	4.93E-18	4.91E-18	0.995	36335.000	5.67E-18	5.68E-18	1.002	36610.000	6.54E-18
36065.000	4.95E-18	4.90E-18	0.989	36340.000	5.72E-18	5.71E-18	0.998	36615.000	6.54E-18
36070.000	4.95E-18	4.91E-18	0.993	36345.000	5.74E-18	5.76E-18	1.004	36620.000	6.58E-18
36075.000	4.89E-18	4.90E-18	1.001	36350.000	5.73E-18	5.73E-18	1.010	36625.000	6.55E-18
36080.000	4.93E-18	4.92E-18	0.998	36355.000	5.81E-18	5.70E-18	0.995	36630.000	6.47E-18
36085.000	4.94E-18	4.93E-18	0.999	36360.000	5.81E-18	5.76E-18	0.991	36635.000	6.53E-18
36090.000	4.94E-18	4.92E-18	0.996	36365.000	5.83E-18	5.79E-18	0.994	36640.000	6.53E-18
36095.000	4.97E-18	4.94E-18	0.994	36370.000	5.87E-18	5.85E-18	0.996	36645.000	6.53E-18
36100.000	5.00E-18	4.93E-18	0.986	36375.000	5.81E-18	5.81E-18	1.000	36650.000	6.57E-18
36105.000	5.00E-18	4.95E-18	0.990	36180.000	5.84E-18	5.81E-18	0.994	36655.000	6.62E-18
36110.000	5.01E-18	4.99E-18	0.996	36185.000	5.89E-18	5.81E-18	0.986	36660.000	6.63E-18
36115.000	5.03E-18	5.03E-18	1.000	36190.000	5.90E-18	5.87E-18	0.995	36665.000	6.66E-18
36120.000	5.01E-18	5.03E-18	1.003	36195.000	5.84E-18	5.84E-18	1.006	36670.000	6.71E-18
36125.000	5.04E-18	5.02E-18	0.997	36400.000	5.86E-18	5.87E-18	1.001	36675.000	6.73E-18
36130.000	5.04E-18	5.03E-18	0.998	36405.000	5.84E-18	5.81E-18	0.994	36680.000	6.75E-18
36135.000	5.01E-18	5.04E-18	1.007	36410.000	5.84E-18	5.83E-18	0.998	36685.000	6.74E-18
36140.000	5.10E-18	5.04E-18	0.985	36415.000	5.82E-18	5.78E-18	0.996	36690.000	6.77E-18
36145.000	5.09E-18	5.05E-18	1.000	36420.000	5.82E-18	5.79E-18	0.993	36695.000	6.76E-18
36150.000	5.11E-18	5.08E-18	0.994	36425.000	5.84E-18	5.85E-18	1.006	36700.000	6.80E-18
36155.000	5.13E-18	5.10E-18	0.994	36430.000	5.86E-18	5.86E-18	1.001	36675.000	6.73E-18
36160.000	5.11E-18	5.03E-18	1.003	36435.000	5.77E-18	5.78E-18	1.002	36705.000	6.77E-18
36165.000	5.15E-18	5.12E-18	1.001	36440.000	5.80E-18	5.78E-18	0.997	36710.000	6.82E-18
36170.000	5.17E-18	5.18E-18	1.001	36445.000	5.82E-18	5.79E-18	0.995	36720.000	6.79E-18
36175.000	5.23E-18	5.19E-18	0.994	36450.000	5.80E-18	5.74E-18	0.990	36725.000	6.97E-18
36180.000	5.26E-18	5.21E-18	0.990	36455.000	5.82E-18	5.80E-18	0.996	36730.000	6.85E-18
36185.000	5.27E-18	5.22E-18	0.990	36460.000	5.84E-18	5.81E-18	0.997	36735.000	6.84E-18
36190.000	5.30E-18	5.22E-18	0.984	36465.000	5.86E-18	5.82E-18	0.993	36740.000	6.85E-18
36195.000	5.31E-18	5.22E-18	0.982	36470.000	5.85E-18	5.86E-18	1.002	36745.000	7.00E-18
36200.000	5.31E-18	5.24E-18	0.988	36475.000	5.91E-18	5.87E-18	0.993	36750.000	7.04E-18
36205.000	5.32E-18	5.21E-18	0.990	36480.000	5.94E-18	5.92E-18	0.997	36755.000	7.06E-18
36210.000	5.31E-18	5.27E-18	1.003	36485.000	5.84E-18	5.84E-18	1.002	36760.000	6.93E-18
36215.000	5.30E-18	5.26E-18	1.001	36490.000	5.95E-18	5.98E-18	1.005	36765.000	7.17E-18
36220.000	5.27E-18	5.30E-18	1.006	36495.000	6.01E-18	6.02E-18	1.001	36770.000	7.16E-18
36225.000	5.28E-18	5.27E-18	0.998	36500.000	6.03E-18	6.04E-18	1.002	36775.000	7.17E-18
36230.000	5.28E-18	5.31E-18	0.990	36505.000	6.06E-18	6.05E-18	0.999	36780.000	7.06E-18
36235.000	5.29E-18	5.27E-18	0.992	36510.000	6.11E-18	6.11E-18	1.000	36785.000	7.13E-18
36240.000	5.30E-18	5.31E-18	1.003	36515.000	6.13E-18	6.13E-18	1.005	36790.000	7.16E-18
36245.000	5.31E-18	5.27E-18	1.006	36495.000	6.14E-18	6.14E-18	1.000	36795.000	7.19E-18
36250.000	5.31E-18	5.28E-18	0.995	36525.000	6.17E-18	6.16E-18	0.998	36800.000	7.15E-18
36255.000	5.36E-18	5.31E-18	0.990	36530.000	6.22E-18	6.20E-18	0.996	36805.000	7.19E-18
36260.000	5.36E-18	5.31E-18	0.991	36535.000	6.22E-18	6.24E-18	1.002	36810.000	7.14E-18
36265.000	5.37E-18	5.35E-18	0.996	36540.000	6.24E-18	6.28E-18	1.006	36815.000	7.19E-18
36270.000	5.32E-18	5.42E-18	1.003	36545.000	6.30E-18	6.32E-18	1.004	36820.000	7.13E-18
36275.000	5.42E-18	5.45E-18	1.005	36550.000	6.31E-18	6.34E-18	1.004	36825.000	7.12E-18
36280.000	5.48E-18	5.44E-18	0.993	36555.009	6.33E-18	6.31E-18	0.996	36830.000	7.13E-18
36285.000	5.44E-18	5.47E-18	1.006	36560.060	6.37E-18	6.35E-18	0.996	36835.000	7.17E-18
36290.000	5.51E-18	5.46E-18	0.991	36565.000	6.38E-18	6.45E-18	1.012	36840.000	7.18E-18
36295.000	5.51E-18	5.47E-18	0.993	36570.060	6.44E-18	6.44E-18	1.002	36845.000	7.14E-18

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
36850.000	7.23E-18	7.23E-18	1.000	37125.000	7.99E-18	7.91E-18	0.990	37400.000	8.95E-18	8.72E-18	0.974
36855.000	7.17E-18	7.23E-18	1.009	37130.000	7.96E-18	7.91E-18	0.994	37405.000	8.82E-18	8.67E-18	0.984
36860.000	7.20E-18	7.21E-18	1.001	37135.000	7.95E-18	7.91E-18	0.995	37410.000	8.78E-18	8.60E-18	0.984
36865.000	7.21E-18	7.23E-18	1.003	37140.000	7.96E-18	7.91E-18	0.994	37415.000	8.74E-18	8.56E-18	0.980
36870.000	7.25E-18	7.25E-18	1.001	37145.000	7.95E-18	7.90E-18	0.993	37420.000	8.74E-18	8.57E-18	0.979
36875.000	7.30E-18	7.26E-18	0.994	37150.000	7.96E-18	7.87E-18	0.989	37425.000	8.79E-18	8.57E-18	0.975
36880.000	7.27E-18	7.21E-18	0.992	37155.000	7.96E-18	7.84E-18	0.983	37430.000	8.79E-18	8.58E-18	0.976
36885.000	7.26E-18	7.25E-18	0.998	37160.000	7.93E-18	7.89E-18	0.995	37435.000	8.78E-18	8.58E-18	0.977
36890.000	7.28E-18	7.29E-18	1.001	37165.000	8.04E-18	7.92E-18	0.985	37440.000	8.72E-18	8.57E-18	0.983
36895.000	7.32E-18	7.28E-18	0.995	37170.000	7.98E-18	7.92E-18	0.993	37445.000	8.75E-18	8.60E-18	0.982
36900.000	7.30E-18	7.25E-18	0.993	37175.000	8.05E-18	7.94E-18	0.986	37450.000	8.81E-18	8.62E-18	0.979
36905.000	7.33E-18	7.29E-18	0.994	37180.000	8.04E-18	7.98E-18	0.993	37455.000	8.84E-18	8.65E-18	0.979
36910.000	7.35E-18	7.35E-18	1.000	37185.000	8.04E-18	8.02E-18	0.998	37460.000	8.88E-18	8.69E-18	0.979
36915.000	7.33E-18	7.39E-18	1.008	37190.000	8.10E-18	8.05E-18	0.994	37465.000	8.92E-18	8.75E-18	0.981
36920.000	7.31E-18	7.35E-18	1.005	37195.000	8.11E-18	8.08E-18	0.996	37470.000	8.95E-18	8.81E-18	0.985
36925.000	7.35E-18	7.33E-18	0.997	37200.000	8.11E-18	8.08E-18	0.990	37475.000	9.00E-18	8.85E-18	0.983
36930.000	7.34E-18	7.33E-18	0.998	37205.000	8.15E-18	8.07E-18	0.991	37480.000	9.06E-18	8.88E-18	0.980
36935.000	7.37E-18	7.36E-18	0.998	37210.000	8.19E-18	8.12E-18	0.991	37485.000	9.07E-18	8.91E-18	0.982
36940.000	7.40E-18	7.42E-18	0.995	37215.000	8.16E-18	8.14E-18	0.995	37490.000	9.11E-18	8.95E-18	0.982
36945.000	7.40E-18	7.39E-18	0.999	37220.000	8.19E-18	8.14E-18	0.994	37495.000	9.18E-18	9.05E-18	0.986
36950.000	7.45E-18	7.40E-18	0.994	37225.000	8.22E-18	8.11E-18	0.987	37500.000	9.22E-18	9.06E-18	0.983
36955.000	7.50E-18	7.41E-18	0.988	37230.000	8.20E-18	8.15E-18	0.994	37505.000	9.28E-18	9.04E-18	0.974
36960.000	7.48E-18	7.48E-18	0.995	37235.000	8.25E-18	8.21E-18	0.987	37510.000	9.28E-18	9.06E-18	0.977
36965.000	7.59E-18	7.50E-18	0.988	37240.000	8.28E-18	8.13E-18	0.982	37515.000	9.22E-18	9.16E-18	0.994
36970.000	7.54E-18	7.58E-18	1.005	37245.000	8.30E-18	8.17E-18	0.985	37520.000	9.26E-18	9.19E-18	0.992
36975.000	7.59E-18	7.55E-18	0.995	37250.000	8.33E-18	8.23E-18	0.986	37525.000	9.29E-18	9.11E-18	0.980
36980.000	7.60E-18	7.62E-18	0.992	37255.000	8.31E-18	8.26E-18	0.983	37530.000	9.28E-18	9.12E-18	0.983
36985.000	7.67E-18	7.69E-18	1.002	37260.000	8.36E-18	8.27E-18	0.989	37535.000	9.32E-18	9.13E-18	0.979
36990.000	7.65E-18	7.66E-18	1.001	37265.000	8.50E-18	8.30E-18	0.976	37540.000	9.33E-18	9.12E-18	0.978
36995.000	7.72E-18	7.72E-18	0.993	37270.000	8.50E-18	8.35E-18	0.982	37545.000	9.38E-18	9.16E-18	0.976
37000.000	7.69E-18	7.68E-18	0.999	37275.000	8.54E-18	8.40E-18	0.983	37550.000	9.37E-18	9.16E-18	0.977
37005.000	7.74E-18	7.70E-18	0.995	37280.000	8.53E-18	8.42E-18	0.987	37555.000	9.40E-18	9.16E-18	0.974
37010.000	7.80E-18	7.80E-18	0.994	37285.000	8.60E-18	8.44E-18	0.981	37560.000	9.30E-18	9.16E-18	0.985
37015.000	7.85E-18	7.80E-18	0.994	37290.000	8.71E-18	8.50E-18	0.976	37565.000	9.33E-18	9.18E-18	0.984
37020.000	7.81E-18	7.85E-18	1.005	37295.000	8.68E-18	8.58E-18	0.989	37570.000	9.38E-18	9.24E-18	0.985
37025.000	7.90E-18	7.89E-18	0.999	37300.000	8.72E-18	8.60E-18	0.987	37575.000	9.43E-18	9.30E-18	0.987
37030.000	7.93E-18	7.93E-18	0.997	37305.000	8.73E-18	8.62E-18	0.987	37580.000	9.52E-18	9.26E-18	0.973
37035.000	7.98E-18	7.99E-18	1.001	37310.000	8.78E-18	8.64E-18	0.984	37585.000	9.55E-18	9.28E-18	0.971
37040.000	8.03E-18	8.04E-18	1.001	37315.000	8.87E-18	8.66E-18	0.976	37590.000	9.33E-18	9.18E-18	0.984
37045.000	8.00E-18	8.04E-18	0.999	37320.000	8.92E-18	8.70E-18	0.976	37595.000	9.60E-18	9.34E-18	0.973
37050.000	8.02E-18	8.05E-18	1.004	37325.000	8.89E-18	8.74E-18	0.983	37600.000	9.65E-18	9.35E-18	0.968
37055.000	8.11E-18	8.10E-18	0.999	37330.000	8.89E-18	8.78E-18	0.988	37605.000	9.69E-18	9.39E-18	0.970
37060.000	8.15E-18	8.16E-18	1.002	37335.000	8.92E-18	8.85E-18	0.993	37610.000	9.74E-18	9.48E-18	0.974
37065.000	8.19E-18	8.20E-18	1.001	37340.000	9.01E-18	8.86E-18	0.983	37615.000	9.67E-18	9.48E-18	0.981
37070.000	8.21E-18	8.20E-18	0.999	37345.000	8.97E-18	8.85E-18	0.977	37620.000	9.69E-18	9.48E-18	0.978
37075.000	8.19E-18	8.19E-18	1.000	37350.000	9.09E-18	8.85E-18	0.973	37625.000	9.73E-18	9.52E-18	0.976
37080.000	8.23E-18	8.16E-18	0.991	37355.000	9.03E-18	8.92E-18	0.988	37630.000	9.76E-18	9.51E-18	0.976
37085.000	8.28E-18	8.11E-18	0.979	37360.000	9.07E-18	8.93E-18	0.984	37635.000	9.75E-18	9.51E-18	0.976
37090.000	8.20E-18	8.08E-18	0.985	37365.000	9.01E-18	8.90E-18	0.988	37640.000	9.76E-18	9.51E-18	0.974
37095.000	8.16E-18	8.06E-18	0.988	37370.000	9.09E-18	8.88E-18	0.977	37645.000	9.69E-18	9.47E-18	0.978
37100.000	8.09E-18	8.05E-18	0.995	37375.000	9.06E-18	8.88E-18	0.980	37650.000	9.75E-18	9.52E-18	0.976
37105.000	8.12E-18	8.02E-18	0.997	37380.000	9.02E-18	8.88E-18	0.983	37655.000	9.78E-18	9.54E-18	0.981
37110.000	8.06E-18	8.06E-18	0.990	37385.000	9.04E-18	8.88E-18	0.984	37660.000	9.75E-18	9.54E-18	0.978
37115.000	8.09E-18	8.06E-18	0.984	37390.000	9.04E-18	8.85E-18	0.979	37665.000	9.69E-18	9.52E-18	0.982
37120.000	8.06E-18	7.91E-18	0.973	37395.000	8.96E-18	8.78E-18	0.980	37670.000	9.70E-18	9.52E-18	0.981

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	Ratio												
37675.000	9.71E-18	9.51E-18	0.980	37950.000	9.79E-18	9.70E-18	0.991	38225.000	1.04E-17	1.03E-17	0.992	38230.000	1.04E-17	1.03E-17	0.992
37680.000	9.74E-18	9.49E-18	0.974	37955.000	9.89E-18	9.70E-18	0.981	38235.000	1.04E-17	1.04E-17	0.999	38240.000	1.04E-17	1.04E-17	0.999
37685.000	9.67E-18	9.44E-18	0.976	37960.000	9.82E-18	9.71E-18	0.989	38245.000	1.05E-17	1.04E-17	0.986	38250.000	1.04E-17	1.04E-17	0.997
37690.000	9.64E-18	9.41E-18	0.977	37965.000	9.84E-18	9.75E-18	0.990	38255.000	1.05E-17	1.04E-17	0.986	38260.000	1.04E-17	1.04E-17	0.997
37695.000	9.63E-18	9.42E-18	0.978	37970.000	9.94E-18	9.74E-18	0.980	38255.000	1.05E-17	1.04E-17	0.997	38255.000	1.05E-17	1.04E-17	0.997
37700.000	9.66E-18	9.39E-18	0.972	37975.000	9.8E-18	9.72E-18	0.985	38255.000	1.05E-17	1.04E-17	0.992	38255.000	1.05E-17	1.04E-17	0.992
37705.000	9.55E-18	9.39E-18	0.983	37980.000	9.92E-18	9.73E-18	0.980	38260.000	1.05E-17	1.04E-17	0.994	38260.000	1.05E-17	1.04E-17	0.994
37710.000	9.58E-18	9.38E-18	0.980	37985.000	9.82E-18	9.76E-18	0.994	38265.000	1.05E-17	1.05E-17	0.996	38270.000	1.06E-17	1.05E-17	0.990
37715.000	9.52E-18	9.31E-18	0.978	37990.000	9.92E-18	9.79E-18	0.987	38275.000	1.07E-17	1.05E-17	0.985	38280.000	1.07E-17	1.06E-17	0.989
37720.000	9.54E-18	9.32E-18	0.971	37995.000	9.98E-18	9.79E-18	0.980	38285.000	1.06E-17	1.06E-17	0.989	38290.000	1.08E-17	1.06E-17	0.983
37725.000	9.52E-18	9.33E-18	0.980	38000.000	9.92E-18	9.79F-18	0.987	38300.000	1.08E-17	1.08E-17	1.001	38305.000	1.08E-17	1.08E-17	1.001
37730.000	9.55E-18	9.33E-18	0.977	38005.000	9.85E-18	9.81E-18	0.996	38310.000	1.09E-17	1.08E-17	0.994	38315.000	1.09E-17	1.08E-17	0.990
37735.000	9.61E-18	9.41E-18	0.979	38010.000	1.00E-17	9.86E-18	0.986	38320.000	1.08E-17	1.06E-17	0.983	38325.000	1.08E-17	1.07E-17	0.990
37740.000	9.65E-18	9.44E-18	0.978	38015.000	1.01E-17	9.89E-18	0.979	38330.000	1.08E-17	1.08E-17	0.998	38335.000	1.08E-17	1.08E-17	0.995
37745.000	9.68E-18	9.43E-18	0.975	38020.000	1.01E-17	9.93E-18	0.983	38340.000	1.12E-17	1.11E-17	1.000	38345.000	1.12E-17	1.11E-17	1.000
37750.000	9.75E-18	9.54E-18	0.979	38025.000	1.02E-17	9.96E-18	0.977	38350.000	1.11E-17	1.10E-17	1.000	38355.000	1.11E-17	1.10E-17	1.000
37755.000	9.86E-18	9.68E-18	0.972	38030.000	1.02E-17	1.00E-17	0.983	38360.000	1.11E-17	1.11E-17	1.000	38365.000	1.11E-17	1.11E-17	1.000
37760.000	9.94E-18	9.60E-18	0.966	38035.000	1.01E-17	1.01E-17	0.987	38370.000	1.11E-17	1.11E-17	0.993	38375.000	1.11E-17	1.11E-17	0.993
37765.000	9.94E-18	9.66E-18	0.972	38040.000	1.02E-17	1.01E-17	0.992	38380.000	1.12E-17	1.12E-17	0.992	38385.000	1.12E-17	1.12E-17	0.992
37770.000	1.00E-17	9.71E-18	0.971	38045.000	1.02E-17	1.02E-17	0.989	38390.000	1.12E-17	1.12E-17	0.993	38395.000	1.12E-17	1.12E-17	0.993
37775.000	1.01E-17	9.75E-18	0.965	38050.000	1.04E-17	1.02E-17	0.984	38395.000	1.13E-17	1.11E-17	0.995	38400.000	1.13E-17	1.11E-17	0.995
37780.000	1.01E-17	9.76E-18	0.966	38055.000	1.04E-17	1.03E-17	0.987	38410.000	1.12E-17	1.11E-17	0.992	38415.000	1.12E-17	1.11E-17	0.992
37785.000	1.02E-17	9.83E-18	0.963	38060.000	1.05E-17	1.03E-17	0.980	38420.000	1.10E-17	1.10E-17	1.000	38425.000	1.10E-17	1.10E-17	1.000
37790.000	1.01E-17	9.89E-18	0.979	38065.000	1.06E-17	1.04E-17	0.977	38430.000	1.12E-17	1.11E-17	0.993	38435.000	1.12E-17	1.11E-17	0.993
37795.000	1.02E-17	9.94E-18	0.974	38070.000	1.06E-17	1.04E-17	0.982	38440.000	1.12E-17	1.11E-17	0.992	38445.000	1.12E-17	1.11E-17	0.992
37800.000	1.02E-17	9.94E-18	0.975	38075.000	1.06E-17	1.04E-17	0.986	38450.000	1.12E-17	1.11E-17	0.995	38455.000	1.12E-17	1.11E-17	0.995
37805.000	1.02E-17	9.96E-18	0.977	38080.000	1.06E-17	1.05E-17	0.995	38460.000	1.12E-17	1.11E-17	0.996	38465.000	1.12E-17	1.11E-17	0.996
37810.000	1.02E-17	9.99E-18	0.970	38085.000	1.06E-17	1.06E-17	0.997	38470.000	1.12E-17	1.11E-17	0.997	38475.000	1.12E-17	1.11E-17	0.997
37815.000	1.03E-17	1.00E-17	0.973	38090.000	1.07E-17	1.05E-17	0.984	38480.000	1.10E-17	1.10E-17	1.013	38485.000	1.10E-17	1.10E-17	1.003
37820.000	1.02E-17	1.00E-17	0.981	38095.000	1.07E-17	1.05E-17	0.984	38490.000	1.11E-17	1.11E-17	0.998	38495.000	1.11E-17	1.11E-17	0.998
37825.000	1.03E-17	1.00E-17	0.971	38100.000	1.07E-17	1.06E-17	0.989	38500.000	1.12E-17	1.11E-17	0.991	38505.000	1.12E-17	1.11E-17	0.991
37830.000	1.03E-17	1.00E-17	0.973	38105.000	1.07E-17	1.06E-17	0.995	38510.000	1.13E-17	1.12E-17	0.994	38515.000	1.13E-17	1.12E-17	0.994
37835.000	1.03E-17	1.00E-17	0.972	38110.000	1.07E-17	1.06E-17	0.982	38520.000	1.12E-17	1.11E-17	0.992	38525.000	1.12E-17	1.11E-17	0.992
37840.000	1.03E-17	1.00E-17	0.972	38115.000	1.07E-17	1.06E-17	0.991	38530.000	1.10E-17	1.10E-17	0.990	38535.000	1.10E-17	1.10E-17	0.990
37845.000	1.03E-17	1.00E-17	0.973	38120.000	1.07E-17	1.06E-17	0.992	38540.000	1.11E-17	1.11E-17	0.998	38545.000	1.11E-17	1.11E-17	0.998
37850.000	1.03E-17	1.00E-17	0.971	38125.000	1.07E-17	1.06E-17	0.990	38550.000	1.12E-17	1.11E-17	0.993	38555.000	1.12E-17	1.11E-17	0.993
37855.000	1.03E-17	1.00E-17	0.974	38130.000	1.06E-17	1.05E-17	0.994	38560.000	1.10E-17	1.10E-17	0.996	38565.000	1.10E-17	1.10E-17	0.996
37860.000	1.02E-17	1.00E-17	0.981	38135.000	1.07E-17	1.05E-17	0.983	38570.000	1.09E-17	1.09E-17	1.004	38575.000	1.09E-17	1.09E-17	1.004
37865.000	1.02E-17	1.00E-17	0.980	38140.000	1.07E-17	1.06E-17	0.988	38580.000	1.08E-17	1.08E-17	0.997	38585.000	1.08E-17	1.08E-17	0.997
37870.000	1.02E-17	1.00E-17	0.972	38145.000	1.07E-17	1.06E-17	0.991	38590.000	1.07E-17	1.07E-17	0.999	38595.000	1.07E-17	1.07E-17	0.999
37875.000	1.02E-17	1.00E-17	0.973	38150.000	1.06E-17	1.05E-17	0.992	38600.000	1.06E-17	1.06E-17	0.998	38605.000	1.06E-17	1.06E-17	0.998
37880.000	1.01E-17	9.99E-18	0.982	38155.000	1.06E-17	1.05E-17	0.994	38610.000	1.05E-17	1.05E-17	0.999	38615.000	1.05E-17	1.05E-17	0.999
37885.000	1.01E-17	9.99E-18	0.979	38160.000	1.04E-17	1.05E-17	0.991	38620.000	1.04E-17	1.04E-17	0.998	38625.000	1.04E-17	1.04E-17	0.998
37890.000	1.00E-17	9.88E-18	0.988	38165.000	1.04E-17	1.05E-17	0.996	38630.000	1.03E-17	1.03E-17	1.002	38635.000	1.03E-17	1.03E-17	1.002
37895.000	9.96E-18	9.87E-18	0.991	38170.000	1.04E-17	1.04E-17	1.001	38640.000	1.02E-17	1.02E-17	1.004	38645.000	1.02E-17	1.02E-17	1.004
37900.000	9.91E-18	9.87E-18	0.996	38175.000	1.05E-17	1.04E-17	1.001	38650.000	1.02E-17	1.02E-17	1.004	38655.000	1.02E-17	1.02E-17	1.004
37905.000	9.91E-18	9.70E-18	0.978	38180.000	1.06E-17	1.05E-17	1.001	38660.000	1.02E-17	1.02E-17	1.004	38665.000	1.02E-17	1.02E-17	1.004
37910.000	9.80E-18	9.66E-18	0.980	38185.000	1.07E-17	1.06E-17	1.001	38670.000	1.02E-17	1.02E-17	1.004	38675.000	1.02E-17	1.02E-17	1.004
37915.000	9.80E-18	9.66E-18	0.981	38190.000	1.08E-17	1.07E-17	1.001	38680.000	1.02E-17	1.02E-17	1.004	38685.000	1.02E-17	1.02E-17	1.004
37920.000	9.89E-18	9.74E-18	0.984	38195.000	1.09E-17	1.08E-17	1.001	38690.000	1.02E-17	1.02E-17	1.004	38695.000	1.02E-17	1.02E-17	1.004
37925.000	9.89E-18	9.74E-18	0.984	38200.000	1.09E-17	1.08E-17	1.001	38700.000	1.02E-17	1.02E-17	1.004	38705.000	1.02E-17	1.02E-17	1.004
37930.000	9.91E-18	9.70E-18	0.978	38205.000	1.04E-17	1.04E-17	1.001	38710.000	1.02E-17	1.02E-17	1.004	38715.000	1.02E-17	1.02E-17	1.004
37935.000	9.90E-18	9.66E-18	0.980	38210.000	1.04E-17	1.04E-17	1.001	38720.000							

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO (13)

Wavenumber	HCO	BASS	Ratio												
38500.000	1.05E-17	1.06E-17	1.012	38775.000	1.11E-17	1.11E-17	1.004	39050.000	1.14E-17	1.14E-17	1.001	38500.000	1.05E-17	1.06E-17	1.005
38505.000	1.05E-17	1.06E-17	1.012	38780.000	1.11E-17	1.12E-17	1.005	39055.000	1.15E-17	1.15E-17	0.996	38500.000	1.06E-17	1.06E-17	1.005
38510.000	1.06E-17	1.06E-17	1.003	38785.000	1.11E-17	1.12E-17	1.007	39060.000	1.15E-17	1.15E-17	0.998	38505.000	1.06E-17	1.06E-17	1.008
38515.000	1.06E-17	1.06E-17	1.003	38790.000	1.11E-17	1.12E-17	1.006	39065.000	1.14E-17	1.15E-17	1.008	38510.000	1.06E-17	1.06E-17	1.008
38520.000	1.06E-17	1.07E-17	1.007	38795.000	1.10E-17	1.12E-17	1.014	39070.000	1.16E-17	1.16E-17	0.991	38515.000	1.06E-17	1.07E-17	1.008
38525.000	1.06E-17	1.07E-17	1.010	38800.000	1.11E-17	1.12E-17	1.005	39075.000	1.15E-17	1.15E-17	1.001	38520.000	1.06E-17	1.07E-17	1.005
38530.000	1.07E-17	1.07E-17	1.002	38805.000	1.10E-17	1.12E-17	1.017	39080.000	1.15E-17	1.15E-17	1.004	38525.000	1.07E-17	1.07E-17	1.004
38535.000	1.07E-17	1.08E-17	1.006	38810.000	1.10E-17	1.12E-17	1.017	39085.000	1.15E-17	1.16E-17	1.005	38530.000	1.07E-17	1.08E-17	1.006
38540.000	1.08E-17	1.08E-17	1.002	38815.000	1.11E-17	1.12E-17	1.008	39090.000	1.16E-17	1.16E-17	0.997	38535.000	1.08E-17	1.08E-17	1.005
38545.000	1.07E-17	1.09E-17	1.019	38820.000	1.11E-17	1.12E-17	1.009	39095.000	1.17E-17	1.16E-17	0.990	38540.000	1.07E-17	1.09E-17	1.009
38550.000	1.09E-17	1.10E-17	1.006	38825.000	1.11E-17	1.12E-17	1.010	39100.000	1.16E-17	1.16E-17	0.993	38545.000	1.09E-17	1.10E-17	1.006
38555.000	1.10E-17	1.10E-17	1.001	38830.000	1.12E-17	1.12E-17	1.003	39105.000	1.17E-17	1.16E-17	0.993	38550.000	1.10E-17	1.10E-17	1.001
38560.000	1.10E-17	1.10E-17	1.003	38835.000	1.11E-17	1.13E-17	1.014	39110.000	1.17E-17	1.16E-17	0.996	38555.000	1.10E-17	1.10E-17	1.003
38565.000	1.11E-17	1.11E-17	0.999	38840.000	1.12E-17	1.13E-17	1.007	39115.000	1.17E-17	1.17E-17	0.997	38560.000	1.11E-17	1.11E-17	0.997
38570.000	1.10E-17	1.11E-17	1.011	38845.000	1.12E-17	1.13E-17	1.008	39120.000	1.18E-17	1.17E-17	0.990	38565.000	1.10E-17	1.11E-17	0.990
38575.000	1.11E-17	1.12E-17	1.005	38850.000	1.12E-17	1.13E-17	1.010	39125.000	1.17E-17	1.17E-17	1.003	38570.000	1.11E-17	1.12E-17	1.005
38580.000	1.12E-17	1.13E-17	1.006	38855.000	1.12E-17	1.13E-17	1.011	39130.000	1.18E-17	1.18E-17	0.997	38575.000	1.12E-17	1.13E-17	1.006
38585.000	1.13E-17	1.13E-17	1.002	38860.000	1.13E-17	1.13E-17	1.004	39135.000	1.18E-17	1.18E-17	0.998	38580.000	1.13E-17	1.13E-17	1.002
38590.000	1.13E-17	1.14E-17	1.006	38865.000	1.12E-17	1.14E-17	1.015	39140.000	1.18E-17	1.18E-17	0.996	38585.000	1.13E-17	1.14E-17	1.006
38595.000	1.13E-17	1.14E-17	1.008	38870.000	1.12E-17	1.14E-17	1.015	39145.000	1.18E-17	1.18E-17	0.997	38590.000	1.13E-17	1.14E-17	1.008
38600.000	1.14E-17	1.14E-17	1.002	38875.000	1.12E-17	1.14E-17	1.014	39150.000	1.18E-17	1.18E-17	0.997	38595.000	1.14E-17	1.14E-17	1.002
38605.000	1.14E-17	1.15E-17	1.005	38880.000	1.13E-17	1.15E-17	1.005	39155.000	1.19E-17	1.18E-17	0.992	38600.000	1.14E-17	1.15E-17	1.005
38610.000	1.15E-17	1.15E-17	1.001	38885.000	1.12E-17	1.14E-17	1.014	39160.000	1.19E-17	1.18E-17	0.992	38605.000	1.15E-17	1.15E-17	1.001
38615.000	1.16E-17	1.15E-17	0.995	38890.000	1.12E-17	1.14E-17	1.015	39165.000	1.18E-17	1.18E-17	0.999	38610.000	1.16E-17	1.15E-17	0.995
38620.000	1.15E-17	1.16E-17	1.007	38895.000	1.12E-17	1.13E-17	1.013	39170.000	1.18E-17	1.18E-17	1.000	38615.000	1.15E-17	1.16E-17	1.000
38625.000	1.16E-17	1.16E-17	1.002	38900.000	1.13E-17	1.14E-17	1.004	39175.000	1.18E-17	1.17E-17	0.995	38620.000	1.16E-17	1.16E-17	1.002
38630.000	1.16E-17	1.16E-17	1.002	38905.000	1.12E-17	1.13E-17	1.013	39180.000	1.19E-17	1.18E-17	0.992	38625.000	1.16E-17	1.16E-17	1.002
38635.000	1.16E-17	1.16E-17	1.003	38910.000	1.12E-17	1.13E-17	1.010	39185.000	1.19E-17	1.18E-17	0.993	38630.000	1.16E-17	1.16E-17	1.003
38640.000	1.16E-17	1.16E-17	1.003	38915.000	1.11E-17	1.13E-17	1.017	39190.000	1.16E-17	1.16E-17	0.999	38635.000	1.16E-17	1.16E-17	1.003
38645.000	1.17E-17	1.17E-17	0.996	38920.000	1.12E-17	1.13E-17	1.013	39195.000	1.16E-17	1.17E-17	1.009	38640.000	1.17E-17	1.17E-17	1.009
38650.000	1.17E-17	1.17E-17	1.002	38925.000	1.10E-17	1.12E-17	1.019	39200.000	1.16E-17	1.16E-17	1.002	38645.000	1.17E-17	1.17E-17	1.002
38655.000	1.16E-17	1.16E-17	1.003	38930.000	1.11E-17	1.12E-17	1.017	39205.000	1.15E-17	1.15E-17	1.008	38650.000	1.16E-17	1.16E-17	1.008
38660.000	1.16E-17	1.16E-17	1.003	38935.000	1.11E-17	1.12E-17	1.013	39210.000	1.15E-17	1.15E-17	0.993	38655.000	1.16E-17	1.16E-17	1.003
38665.000	1.16E-17	1.16E-17	1.003	38940.000	1.10E-17	1.12E-17	1.017	39215.000	1.15E-17	1.15E-17	1.004	38660.000	1.16E-17	1.16E-17	1.003
38670.000	1.16E-17	1.16E-17	0.994	38945.000	1.10E-17	1.12E-17	1.018	39220.000	1.15E-17	1.15E-17	1.004	38665.000	1.16E-17	1.16E-17	1.003
38675.000	1.15E-17	1.15E-17	1.002	38950.000	1.10E-17	1.12E-17	1.018	39225.000	1.14E-17	1.14E-17	1.002	38670.000	1.15E-17	1.15E-17	1.002
38680.000	1.15E-17	1.15E-17	1.003	38955.000	1.10E-17	1.12E-17	1.017	39230.000	1.13E-17	1.13E-17	1.009	38675.000	1.15E-17	1.15E-17	1.009
38685.000	1.15E-17	1.16E-17	1.003	38960.000	1.10E-17	1.12E-17	1.014	39235.000	1.14E-17	1.15E-17	0.998	38680.000	1.15E-17	1.16E-17	1.003
38690.000	1.15E-17	1.15E-17	0.999	38965.000	1.11E-17	1.12E-17	1.002	39240.000	1.13E-17	1.13E-17	1.008	38685.000	1.15E-17	1.15E-17	1.003
38695.000	1.14E-17	1.14E-17	1.003	38970.000	1.10E-17	1.12E-17	1.009	39245.000	1.12E-17	1.12E-17	1.013	38690.000	1.14E-17	1.14E-17	1.003
38700.000	1.14E-17	1.14E-17	0.998	38975.000	1.10E-17	1.12E-17	1.004	39250.000	1.12E-17	1.12E-17	1.012	38695.000	1.14E-17	1.14E-17	1.003
38705.000	1.13E-17	1.13E-17	1.004	38980.000	1.11E-17	1.13E-17	1.001	39255.000	1.11E-17	1.11E-17	1.009	38700.000	1.13E-17	1.13E-17	1.003
38710.000	1.13E-17	1.13E-17	1.002	38985.000	1.11E-17	1.12E-17	1.006	39260.000	1.12E-17	1.13E-17	1.008	38705.000	1.13E-17	1.13E-17	1.003
38715.000	1.12E-17	1.12E-17	1.002	38990.000	1.11E-17	1.12E-17	1.010	39265.000	1.12E-17	1.13E-17	1.007	38710.000	1.12E-17	1.12E-17	1.003
38720.000	1.11E-17	1.11E-17	1.017	38995.000	1.12E-17	1.13E-17	1.009	39270.000	1.11E-17	1.12E-17	1.017	38715.000	1.11E-17	1.11E-17	1.003
38725.000	1.11E-17	1.11E-17	1.012	39000.000	1.12E-17	1.13E-17	1.004	39275.000	1.12E-17	1.13E-17	1.007	38720.000	1.11E-17	1.11E-17	1.003
38730.000	1.12E-17	1.12E-17	1.001	39005.000	1.12E-17	1.13E-17	1.008	39280.000	1.11E-17	1.12E-17	1.015	38725.000	1.12E-17	1.12E-17	1.003
38735.000	1.11E-17	1.12E-17	1.006	39010.000	1.12E-17	1.13E-17	1.009	39285.000	1.12E-17	1.13E-17	1.007	38730.000	1.11E-17	1.12E-17	1.003
38740.000	1.10E-17	1.12E-17	1.015	39015.000	1.13E-17	1.13E-17	1.001	39290.000	1.12E-17	1.13E-17	1.008	38735.000	1.11E-17	1.12E-17	1.003
38745.000	1.10E-17	1.12E-17	1.006	39020.000	1.14E-17	1.13E-17	1.003	39295.000	1.13E-17	1.13E-17	1.008	38740.000	1.11E-17	1.12E-17	1.003
38750.000	1.10E-17	1.11E-17	1.017	39025.000	1.14E-17	1.14E-17	1.006	39300.000	1.12E-17	1.13E-17	1.012	38745.000	1.11E-17	1.12E-17	1.003
38755.000	1.10E-17	1.11E-17	1.011	39030.000	1.13E-17	1.14E-17	1.008	39305.000	1.14E-17	1.14E-17	1.009	38750.000	1.11E-17	1.12E-17	1.003
38760.000	1.10E-17	1.12E-17	1.014	39035.000	1.14E-17	1.14E-17	1.009	39310.000	1.14E-17	1.14E-17	1.005	38755.000	1.11E-17	1.12E-17	1.003

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO (14)											
Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
39325.000	1.14E-17	1.14E-17	1.004	39600.000	1.10E-17	1.13E-17	1.030	39875.000	1.09E-17	1.11E-17	1.014
39330.000	1.14E-17	1.14E-17	1.006	39605.000	1.10E-17	1.13E-17	1.031	39880.000	1.08E-17	1.10E-17	1.020
39335.000	1.14E-17	1.15E-17	1.009	39610.000	1.12E-17	1.13E-17	1.013	39885.000	1.08E-17	1.10E-17	1.019
39340.000	1.14E-17	1.16E-17	1.014	39615.000	1.12E-17	1.14E-17	1.014	39890.000	1.08E-17	1.10E-17	1.020
39345.000	1.14E-17	1.16E-17	1.014	39620.000	1.12E-17	1.14E-17	1.016	39895.000	1.08E-17	1.10E-17	1.021
39350.000	1.14E-17	1.15E-17	1.013	39625.000	1.13E-17	1.14E-17	1.007	39900.000	1.09E-17	1.10E-17	1.011
39355.000	1.15E-17	1.16E-17	1.007	39630.000	1.13E-17	1.14E-17	1.007	39905.000	1.08E-17	1.10E-17	1.018
39360.000	1.15E-17	1.16E-17	1.006	39635.000	1.12E-17	1.14E-17	1.018	39910.000	1.08E-17	1.10E-17	1.010
39365.000	1.14E-17	1.16E-17	1.014	39640.000	1.12E-17	1.14E-17	1.019	39915.000	1.09E-17	1.10E-17	1.013
39370.000	1.15E-17	1.16E-17	1.005	39645.000	1.13E-17	1.14E-17	1.011	39920.000	1.09E-17	1.10E-17	1.013
39375.000	1.15E-17	1.16E-17	1.007	39650.000	1.14E-17	1.14E-17	1.004	39925.000	1.09E-17	1.10E-17	1.014
39380.000	1.15E-17	1.16E-17	1.009	39655.000	1.14E-17	1.15E-17	1.005	39930.000	1.09E-17	1.11E-17	1.016
39385.000	1.15E-17	1.16E-17	1.005	39660.000	1.13E-17	1.14E-17	1.013	39935.000	1.08E-17	1.11E-17	1.027
39390.000	1.15E-17	1.16E-17	1.004	39665.000	1.14E-17	1.15E-17	1.006	39940.000	1.09E-17	1.11E-17	1.019
39395.000	1.15E-17	1.16E-17	1.007	39670.000	1.14E-17	1.15E-17	1.009	39945.000	1.10E-17	1.11E-17	1.009
39400.000	1.15E-17	1.16E-17	1.005	39675.000	1.15E-17	1.15E-17	1.002	39950.000	1.10E-17	1.11E-17	1.011
39405.000	1.15E-17	1.16E-17	1.003	39680.000	1.16E-17	1.15E-17	0.995	39955.000	1.10E-17	1.11E-17	1.014
39410.000	1.12E-17	1.16E-17	1.030	39685.000	1.15E-17	1.16E-17	1.005	39960.000	1.11E-17	1.11E-17	1.016
39415.000	1.13E-17	1.16E-17	1.021	39690.000	1.15E-17	1.16E-17	1.009	39965.000	1.10E-17	1.11E-17	1.027
39420.000	1.14E-17	1.15E-17	1.003	39695.000	1.14E-17	1.16E-17	1.006	39970.000	1.10E-17	1.12E-17	1.014
39425.000	1.15E-17	1.15E-17	1.004	39700.000	1.15E-17	1.16E-17	1.011	39975.000	1.10E-17	1.12E-17	1.013
39430.000	1.14E-17	1.16E-17	1.014	39705.000	1.15E-17	1.16E-17	1.011	39980.000	1.11E-17	1.12E-17	1.011
39435.000	1.15E-17	1.16E-17	1.022	39710.000	1.16E-17	1.16E-17	1.002	39985.000	1.11E-17	1.12E-17	1.014
39440.000	1.12E-17	1.16E-17	1.022	39715.000	1.15E-17	1.16E-17	1.005	39990.000	1.11E-17	1.12E-17	1.011
39445.000	1.13E-17	1.15E-17	1.021	39720.000	1.16E-17	1.17E-17	1.005	39995.000	1.10E-17	1.11E-17	1.013
39450.000	1.13E-17	1.15E-17	1.017	39725.000	1.15E-17	1.16E-17	1.012	40000.000	1.11E-17	1.12E-17	1.010
39455.000	1.13E-17	1.15E-17	1.014	39730.000	1.15E-17	1.16E-17	1.009	40005.000	1.09E-17	1.12E-17	1.028
39460.000	1.13E-17	1.16E-17	1.017	39735.000	1.14E-17	1.16E-17	1.017	40010.000	1.10E-17	1.12E-17	1.019
39465.000	1.13E-17	1.16E-17	1.013	39740.000	1.15E-17	1.16E-17	1.007	40015.000	1.11E-17	1.12E-17	1.012
39470.000	1.13E-17	1.16E-17	1.010	39745.000	1.16E-17	1.17E-17	1.006	39995.000	1.11E-17	1.12E-17	1.019
39475.000	1.12E-17	1.15E-17	1.009	39750.000	1.15E-17	1.16E-17	1.005	39990.000	1.10E-17	1.12E-17	1.020
39480.000	1.12E-17	1.15E-17	1.017	39755.000	1.15E-17	1.16E-17	1.012	40000.000	1.11E-17	1.12E-17	1.018
39485.000	1.12E-17	1.16E-17	1.018	39760.000	1.14E-17	1.16E-17	1.009	40005.000	1.10E-17	1.12E-17	1.008
39490.000	1.12E-17	1.16E-17	1.017	39765.000	1.15E-17	1.16E-17	1.017	40010.000	1.10E-17	1.12E-17	1.019
39495.000	1.13E-17	1.16E-17	1.013	39770.000	1.12E-17	1.14E-17	1.016	40015.000	1.11E-17	1.12E-17	1.013
39500.000	1.12E-17	1.16E-17	1.012	39775.000	1.13E-17	1.15E-17	1.023	40020.000	1.10E-17	1.12E-17	1.019
39505.000	1.12E-17	1.14E-17	1.020	39780.000	1.14E-17	1.15E-17	1.013	40025.000	1.10E-17	1.12E-17	1.018
39510.000	1.11E-17	1.14E-17	1.018	39785.000	1.14E-17	1.15E-17	1.010	40030.000	1.11E-17	1.12E-17	1.018
39515.000	1.12E-17	1.14E-17	1.018	39790.000	1.11E-17	1.14E-17	1.008	40035.000	1.10E-17	1.12E-17	1.019
39520.000	1.11E-17	1.14E-17	1.017	39795.000	1.12E-17	1.15E-17	1.023	40040.000	1.10E-17	1.12E-17	1.030
39525.000	1.11E-17	1.13E-17	1.004	39800.000	1.10E-17	1.12E-17	1.020	40045.000	1.11E-17	1.12E-17	1.002
39530.000	1.12E-17	1.13E-17	1.013	39815.000	1.12E-17	1.13E-17	1.017	40050.000	1.09E-17	1.12E-17	1.009
39535.000	1.11E-17	1.13E-17	1.025	39820.000	1.10E-17	1.11E-17	1.022	40055.000	1.08E-17	1.12E-17	1.025
39540.000	1.11E-17	1.13E-17	1.016	39825.000	1.09E-17	1.11E-17	1.019	40060.000	1.09E-17	1.12E-17	1.019
39545.000	1.12E-17	1.13E-17	1.006	39830.000	1.08E-17	1.11E-17	1.020	40065.000	1.08E-17	1.12E-17	1.030
39550.000	1.11E-17	1.13E-17	1.019	39835.000	1.09E-17	1.11E-17	1.021	40070.000	1.08E-17	1.12E-17	1.027
39555.000	1.10E-17	1.13E-17	1.027	39840.000	1.08E-17	1.11E-17	1.021	40075.000	1.09E-17	1.12E-17	1.016
39560.000	1.10E-17	1.13E-17	1.018	39845.000	1.09E-17	1.11E-17	1.018	40080.000	1.08E-17	1.12E-17	1.020
39565.000	1.10E-17	1.13E-17	1.015	39850.000	1.09E-17	1.11E-17	1.015	40085.000	1.08E-17	1.12E-17	1.025
39570.000	1.12E-17	1.13E-17	1.014	39855.000	1.09E-17	1.11E-17	1.012	40090.000	1.08E-17	1.12E-17	1.023
39575.000	1.10E-17	1.12E-17	1.022	39860.000	1.09E-17	1.11E-17	1.017	40095.000	1.09E-17	1.12E-17	1.016
39580.000	1.10E-17	1.12E-17	1.022	39865.000	1.08E-17	1.11E-17	1.015	40100.000	1.08E-17	1.12E-17	1.025
39585.000	1.10E-17	1.12E-17	1.022	39870.000	1.09E-17	1.11E-17	1.015	40105.000	1.08E-17	1.12E-17	1.020
39590.000	1.11E-17	1.13E-17	1.014	39875.000	1.09E-17	1.11E-17	1.014	40110.000	1.09E-17	1.12E-17	1.022
39595.000	1.10E-17	1.13E-17	1.027	39880.000	1.09E-17	1.11E-17	1.019	40115.000	1.08E-17	1.12E-17	1.023

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
40150.000	1.09E-17	1.12E-17	1.024	40425.000	1.04E-17	1.06E-17	1.023	40700.000	1.01E-17	1.03E-17	1.015
40155.000	1.09E-17	1.11E-17	1.022	40430.000	1.04E-17	1.07E-17	1.026	40705.000	1.01E-17	1.02E-17	1.015
40160.000	1.09E-17	1.021	1.021	40435.000	1.03E-17	1.06E-17	1.034	40710.000	1.02E-17	1.03E-17	1.006
40165.000	1.09E-17	1.11E-17	1.016	40440.000	1.04E-17	1.06E-17	1.022	40715.000	1.01E-17	1.03E-17	1.017
40170.000	1.09E-17	1.10E-17	1.008	40445.000	1.05E-17	1.06E-17	1.010	40720.000	1.01E-17	1.03E-17	1.017
40175.000	1.09E-17	1.11E-17	1.015	40450.000	1.03E-17	1.06E-17	1.027	40725.000	1.01E-17	1.02E-17	1.015
40180.000	1.08E-17	1.11E-17	1.029	40455.000	1.03E-17	1.06E-17	1.026	40730.000	1.00E-17	1.02E-17	1.024
40185.000	1.08E-17	1.11E-17	1.028	40460.000	1.03E-17	1.05E-17	1.023	40735.000	9.99E-18	1.02E-17	1.024
40190.000	1.09E-17	1.11E-17	1.016	40465.000	1.03E-17	1.05E-17	1.021	40740.000	1.00E-17	1.02E-17	1.022
40195.000	1.08E-17	1.10E-17	1.022	40470.000	1.04E-17	1.05E-17	1.009	40745.000	1.00E-17	1.02E-17	1.020
40200.000	1.08E-17	1.10E-17	1.021	40475.000	1.02E-17	1.05E-17	1.027	40750.000	1.00E-17	1.02E-17	1.019
40205.000	1.07E-17	1.10E-17	1.027	40480.000	1.02E-17	1.05E-17	1.026	40755.000	9.96E-18	1.02E-17	1.022
40210.000	1.07E-17	1.09E-17	1.022	40485.000	1.02E-17	1.04E-17	1.024	40760.000	1.01E-17	1.02E-17	1.008
40215.000	1.07E-17	1.09E-17	1.019	40490.000	1.02E-17	1.04E-17	1.021	40765.000	1.00E-17	1.01E-17	1.014
40220.000	1.07E-17	1.09E-17	1.016	40495.000	1.01E-17	1.04E-17	1.025	40770.000	1.01E-17	1.01E-17	1.002
40225.000	1.06E-17	1.09E-17	1.024	40500.000	1.01E-17	1.04E-17	1.015	40775.000	9.88E-18	1.01E-17	1.025
40230.000	1.06E-17	1.08E-17	1.023	40505.000	1.01E-17	1.03E-17	1.024	40780.000	9.84E-18	1.01E-17	1.025
40235.000	1.06E-17	1.08E-17	1.022	40510.000	1.01E-17	1.03E-17	1.022	40785.000	9.88E-18	1.01E-17	1.016
40240.000	1.06E-17	1.08E-17	1.018	40515.000	1.00E-17	1.03E-17	1.030	40790.000	9.88E-18	1.00E-17	1.013
40245.000	1.05E-17	1.08E-17	1.025	40520.000	1.00E-17	1.03E-17	1.018	40795.000	9.81E-18	9.97E-18	1.016
40250.000	1.04E-17	1.07E-17	1.031	40525.000	1.01E-17	1.03E-17	1.017	40800.000	9.69E-18	9.93E-18	1.025
40255.000	1.05E-17	1.07E-17	1.018	40530.000	1.01E-17	1.03E-17	1.016	40805.000	9.66E-18	9.66E-18	1.025
40260.000	1.05E-17	1.07E-17	1.014	40535.000	1.01E-17	1.03E-17	1.018	40810.000	9.68E-18	9.68E-18	1.025
40265.000	1.04E-17	1.06E-17	1.024	40540.000	1.00E-17	1.03E-17	1.028	40815.000	9.69E-18	9.69E-18	1.025
40270.000	1.04E-17	1.06E-17	1.022	40545.000	1.01E-17	1.03E-17	1.018	40820.000	9.61E-18	9.61E-18	1.025
40275.000	1.04E-17	1.07E-17	1.031	40550.000	1.01E-17	1.03E-17	1.020	40825.000	9.57E-18	9.57E-18	1.025
40280.000	1.04E-17	1.06E-17	1.023	40555.000	1.00E-17	1.03E-17	1.029	40830.000	9.56E-18	9.56E-18	1.025
40285.000	1.04E-17	1.06E-17	1.024	40560.000	9.9E-18	1.03E-17	1.035	40835.000	9.58E-18	9.58E-18	1.025
40290.000	1.04E-17	1.06E-17	1.023	40565.000	1.00E-17	1.03E-17	1.026	40840.000	9.51E-18	9.51E-18	1.025
40295.000	1.04E-17	1.06E-17	1.022	40570.000	1.01E-17	1.03E-17	1.018	40845.000	9.48E-18	9.48E-18	1.025
40300.000	1.04E-17	1.06E-17	1.020	40575.000	1.01E-17	1.03E-17	1.020	40850.000	9.45E-18	9.45E-18	1.025
40305.000	1.04E-17	1.06E-17	1.021	40580.000	1.01E-17	1.02E-17	1.012	40855.000	9.42E-18	9.42E-18	1.025
40310.000	1.05E-17	1.06E-17	1.012	40585.000	1.01E-17	1.02E-17	1.015	40860.000	9.58E-18	9.58E-18	1.025
40315.000	1.05E-17	1.07E-17	1.018	40590.000	1.01E-17	1.02E-17	1.018	40865.000	9.50E-18	9.50E-18	1.025
40320.000	1.05E-17	1.07E-17	1.020	40595.000	1.01E-17	1.02E-17	1.010	40870.000	9.55E-18	9.55E-18	1.025
40325.000	1.06E-17	1.07E-17	1.010	40600.000	1.01E-17	1.02E-17	1.010	40875.000	9.59E-18	9.59E-18	1.025
40330.000	1.04E-17	1.06E-17	1.022	40575.000	1.01E-17	1.02E-17	1.012	40880.000	9.59E-18	9.59E-18	1.025
40335.000	1.06E-17	1.07E-17	1.020	40610.000	1.00E-17	1.02E-17	1.023	40885.000	9.56E-18	9.56E-18	1.025
40340.000	1.05E-17	1.08E-17	1.025	40615.000	1.00E-17	1.02E-17	1.024	40890.000	9.54E-18	9.54E-18	1.025
40345.000	1.04E-17	1.08E-17	1.036	40620.000	1.01E-17	1.02E-17	1.015	40895.000	9.55E-18	9.55E-18	1.025
40350.000	1.05E-17	1.08E-17	1.026	40625.000	1.00E-17	1.02E-17	1.025	40900.000	9.52E-18	9.52E-18	1.025
40355.000	1.05E-17	1.07E-17	1.017	40630.000	1.01E-17	1.02E-17	1.011	40880.000	9.65E-18	9.65E-18	1.025
40360.000	1.05E-17	1.08E-17	1.024	40635.000	1.00E-17	1.02E-17	1.023	40910.000	9.54E-18	9.54E-18	1.025
40365.000	1.04E-17	1.06E-17	1.035	40640.000	1.01E-17	1.03E-17	1.015	40915.000	9.58E-18	9.58E-18	1.025
40370.000	1.04E-17	1.07E-17	1.025	40645.000	1.01E-17	1.03E-17	1.018	40920.000	9.63E-18	9.63E-18	1.025
40375.000	1.02E-17	1.06E-17	1.042	40650.000	1.02E-17	1.03E-17	1.008	40925.000	9.58E-18	9.58E-18	1.025
40380.000	1.03E-17	1.07E-17	1.038	40655.000	1.02E-17	1.03E-17	1.006	40930.000	9.52E-18	9.52E-18	1.025
40385.000	1.04E-17	1.07E-17	1.026	40660.000	1.01E-17	1.02E-17	1.014	40935.000	9.47E-18	9.47E-18	1.025
40390.000	1.05E-17	1.06E-17	1.014	40665.000	1.01E-17	1.02E-17	1.022	40940.000	9.53E-18	9.53E-18	1.025
40395.000	1.04E-17	1.07E-17	1.017	40670.000	1.02E-17	1.03E-17	1.008	40945.000	9.63E-18	9.63E-18	1.025
40400.000	1.05E-17	1.06E-17	1.017	40675.000	1.02E-17	1.03E-17	1.010	40950.000	9.57E-18	9.57E-18	1.025
40405.000	1.05E-17	1.07E-17	1.017	40680.000	1.02E-17	1.03E-17	1.009	40955.000	9.58E-18	9.58E-18	1.025
40410.000	1.05E-17	1.06E-17	1.016	40685.000	1.01E-17	1.02E-17	1.017	40960.000	9.55E-18	9.55E-18	1.025
40415.000	1.05E-17	1.07E-17	1.015	40690.000	1.03E-17	1.03E-17	0.999	40965.000	9.59E-18	9.59E-18	1.025
40420.000	1.05E-17	1.06E-17	1.012	40695.000	1.02E-17	1.03E-17	1.008	40970.000	9.57E-18	9.57E-18	1.025

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO								(116)							
Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
40975.000	9.58E-18			41250.000	8.96E-18			41525.000	8.39E-18			41755.000	7.95E-18		
40980.000	9.57E-18			41255.000	8.95E-18			41530.000	8.41E-18			41760.000	7.93E-18		
40985.000	9.59E-18			41260.000	8.91E-18			41535.000	8.34E-18			41765.000	7.91E-18		
40990.000	9.57E-18			41265.000	8.92E-18			41540.000	8.32E-18			41770.000	7.86E-18		
40995.000	9.48E-18			41270.000	8.91E-18			41545.000	8.26E-18			41775.000	7.80E-18		
41000.000	9.47E-18	9.72E-18	1.026	41275.000	8.87E-18			41550.000	8.32E-18			41780.000	7.83E-18		
41005.000	9.55E-18			41280.000	8.96E-18			41555.000	8.29E-18			41785.000	7.79E-18		
41010.000	9.55E-18			41285.000	8.95E-18			41560.000	8.24E-18			41790.000	7.81E-18		
41015.000	9.61E-18			41290.000	9.01E-18			41565.000	8.22E-18			41795.000	7.77E-18		
41020.000	9.54E-18			41295.000	9.01E-18			41570.000	8.26E-18			41800.000	7.75E-18		
41025.000	9.53E-18			41300.000	8.91E-18			41575.000	8.18E-18			41805.000	7.73E-18		
41030.000	9.53E-18			41305.000	8.93E-18			41580.000	8.23E-18			41810.000	7.71E-18		
41035.000	9.50E-18			41310.000	8.85E-18			41585.000	8.23E-18			41815.000	7.70E-18		
41040.000	9.48E-18			41315.000	8.77E-18			41590.000	8.22E-18			41820.000	7.69E-18		
41045.000	9.38E-18			41320.000	8.85E-18			41595.000	8.21E-18			41825.000	7.68E-18		
41050.000	9.38E-18			41325.000	8.83E-18			41600.000	8.17E-18			41830.000	7.67E-18		
41055.000	9.41E-18			41330.000	8.81E-18			41605.000	8.14E-18			41835.000	7.65E-18		
41060.000	9.46E-18			41335.000	8.85E-18			41610.000	8.11E-18			41840.000	7.64E-18		
41065.000	9.42E-18			41340.000	8.86E-18			41615.000	8.16E-18			41845.000	7.63E-18		
41070.000	9.43E-18			41345.000	8.88E-18			41620.000	8.25E-18			41850.000	7.62E-18		
41075.000	9.44E-18			41350.000	8.86E-18			41625.000	8.23E-18			41855.000	7.61E-18		
41080.000	9.32E-18			41355.000	8.81E-18			41630.000	8.18E-18			41860.000	7.60E-18		
41085.000	9.41E-18			41360.000	8.74E-18			41635.000	8.15E-18			41865.000	7.59E-18		
41090.000	9.43E-18			41365.000	8.85E-18			41640.000	8.16E-18			41870.000	7.58E-18		
41095.000	9.44E-18			41370.000	8.78E-18			41645.000	8.17E-18			41875.000	7.57E-18		
41100.000	9.32E-18			41375.000	8.78E-18			41650.000	8.17E-18			41880.000	7.56E-18		
41105.000	9.32E-18			41380.000	8.71E-18			41655.000	8.23E-18			41885.000	7.55E-18		
41110.000	9.34E-18			41385.000	8.70E-18			41660.000	8.19E-18			41890.000	7.54E-18		
41115.000	9.28E-18			41390.000	8.75E-18			41665.000	8.19E-18			41895.000	7.53E-18		
41120.000	9.21E-18			41395.000	8.68E-18			41670.000	8.17E-18			41900.000	7.52E-18		
41125.000	9.27E-18			41400.000	8.69E-18			41675.000	8.15E-18			41905.000	7.51E-18		
41130.000	9.27E-18			41405.000	8.68E-18			41680.000	8.18E-18			41910.000	7.50E-18		
41135.000	9.25E-18			41410.000	8.63E-18			41685.000	8.08E-18			41915.000	7.49E-18		
41140.000	9.24E-18			41415.000	8.61E-18			41690.000	8.13E-18			41920.000	7.48E-18		
41145.000	9.22E-18			41420.000	8.59E-18			41695.000	8.13E-18			41925.000	7.47E-18		
41150.000	9.20E-18			41425.000	8.62E-18			41700.000	8.14E-18			41930.000	7.46E-18		
41155.000	9.19E-18			41430.000	8.62E-18			41705.000	8.16E-18			41935.000	7.45E-18		
41160.000	9.22E-18			41435.000	8.58E-18			41710.000	8.06E-18			41940.000	7.44E-18		
41165.000	9.18E-18			41440.000	8.60E-18			41715.000	8.00E-18			41945.000	7.43E-18		
41170.000	9.14E-18			41445.000	8.56E-18			41720.000	8.00E-18			41950.000	7.42E-18		
41175.000	9.07E-18			41450.000	8.57E-18			41725.000	8.00E-18			41955.000	7.41E-18		
41180.000	9.08E-18			41455.000	8.49E-18			41730.000	7.95E-18			41960.000	7.40E-18		
41210.000	8.96E-18			41460.000	8.45E-18			41735.000	7.96E-18			41965.000	7.39E-18		
41215.000	9.02E-18			41465.000	8.53E-18			41740.000	8.00E-18			41970.000	7.38E-18		
41220.000	9.07E-18			41470.000	8.52E-18			41745.000	7.96E-18			41975.000	7.37E-18		
41225.000	8.98E-18			41475.000	8.57E-18			41750.000	7.96E-18			41980.000	7.36E-18		
41230.000	8.98E-18			41480.000	8.45E-18			41755.000	7.95E-18			41985.000	7.35E-18		
41235.000	8.93E-18			41485.000	8.45E-18			41760.000	7.93E-18			41990.000	7.34E-18		
41240.000	8.97E-18			41490.000	8.44E-18			41765.000	7.91E-18			41995.000	7.33E-18		
41245.000	8.92E-18			41495.000	8.45E-18			41770.000	7.86E-18			42000.000	7.32E-18		

Comparison of ozone cross sections at 195 K: HCO and Bass data with RATIO = Bass / HCO

Wavenumber	HCO	BASS	RATIO	Wavenumber	HCO	BASS	RATIO
41800.000	7.71E-18	7.96E-18	1.032	42075.000	7.24E-18		
41805.000	7.70E-18			42080.000	7.25E-18		
41810.000	7.76E-18			42085.000	7.17E-18		
41815.000	7.80E-18			42090.000	7.07E-18		
41820.000	7.72E-18			42095.000	7.09E-18		
41825.000	7.65E-18			42100.000	7.09E-18	7.31E-18	1.031
41830.000	7.61E-18			42105.000	7.15E-18		
41835.000	7.67E-18			42110.000	7.18E-18		
41840.000	7.71E-18			42115.000	7.13E-18		
41845.000	7.68E-18			42120.000	7.08E-18		
41850.000	7.64E-18			42125.000	7.11E-18		
41855.000	7.64E-18			42130.000	7.11E-18		
41860.000	7.63E-18			42135.000	6.97E-18		
41865.000	7.61E-18			42140.000	7.03E-18		
41870.000	7.63E-18			42145.000	7.08E-18		
41875.000	7.60E-18			42150.000	7.06E-18		
41880.000	7.56E-18			42155.000	7.07E-18		
41885.000	7.67E-18			42160.000	7.02E-18		
41890.000	7.56E-18			42165.000	7.00E-18		
41895.000	7.59E-18			42170.000	7.04E-18		
41900.000	7.56E-18			42175.000	7.04E-18		
41905.000	7.50E-18			42180.000	6.96E-18		
41910.000	7.49E-18			42185.000	6.98E-18		
41915.000	7.53E-18			42190.000	6.97E-18		
41920.000	7.48E-18			42195.000	7.03E-18		
41925.000	7.50E-18			42200.000	6.98E-18	7.10E-18	1.018
41930.000	7.49E-18			42205.000	6.93E-18		
41935.000	7.53E-18			42210.000	6.86E-18		
41940.000	7.47E-18			42215.000	6.93E-18		
41945.000	7.46E-18			42220.000	6.88E-18		
41950.000	7.47E-18			42225.000	6.91E-18		
41955.000	7.45E-18			42230.000	6.92E-18		
41960.000	7.40E-18			42235.000	6.81E-18		
41965.000	7.44E-18			42240.000	6.84E-18		
41970.000	7.56E-18			42245.000	6.86E-18		
41975.000	7.45E-18			42250.000	6.76E-18		
41980.000	7.39E-18			42255.000	6.73E-18		
41985.000	7.44E-18			42260.000	6.81E-18		
41990.000	7.36E-18			42265.000	6.76E-18		
41995.000	7.35E-18			42265.000	6.76E-18		
42000.000	7.33E-18						
42005.000	7.31E-18						
42010.000	7.40E-18						
42015.000	7.34E-18						
42020.000	7.28E-18						
42025.000	7.24E-18						
42030.000	7.35E-18						
42035.000	7.32E-18						
42040.000	7.32E-18						
42045.000	7.33E-18						
42050.000	7.25E-18						
42055.000	7.21E-18						
42060.000	7.25E-18						
42065.000	7.20E-18						
42070.000	7.19E-18						

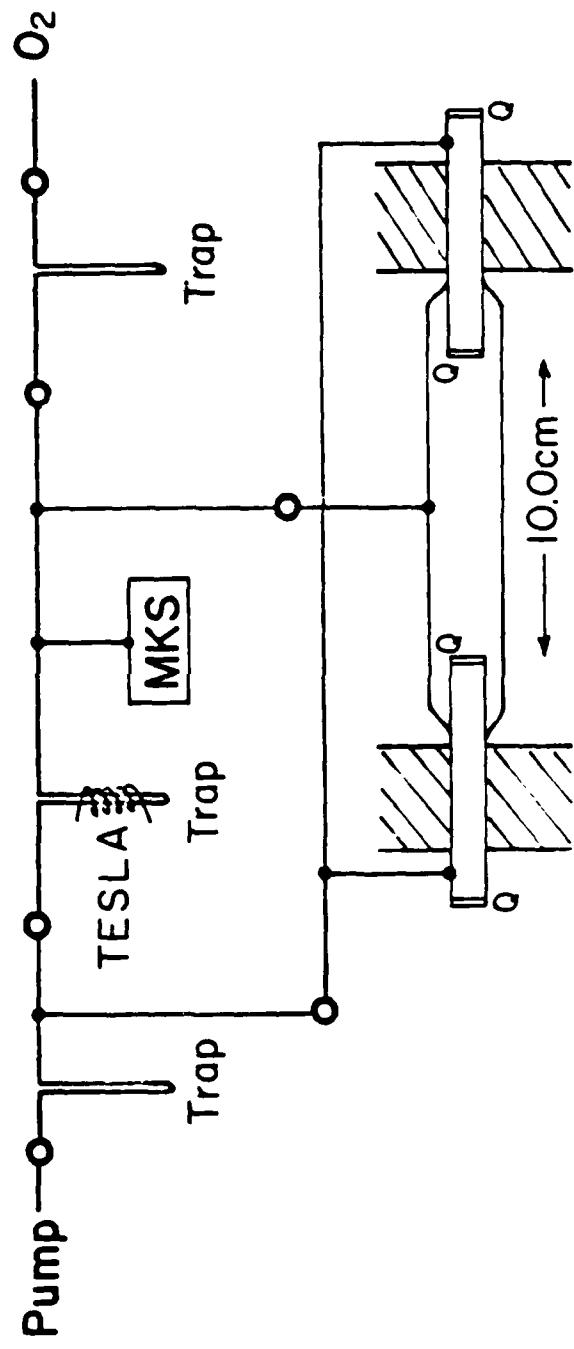


Figure 1. Experimental arrangement for preparation of ozone

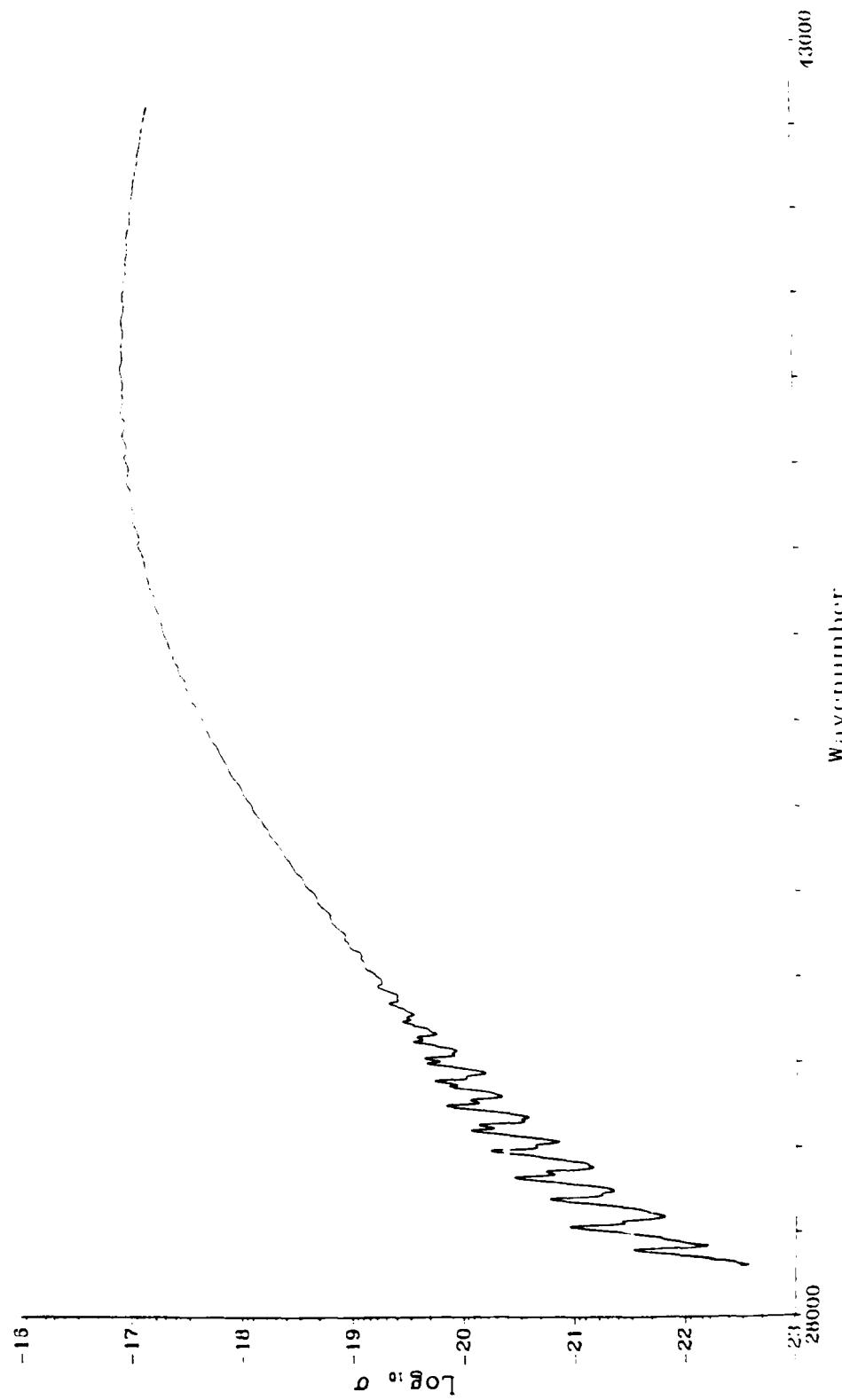


Figure 2. The cross sections of ozone at 195 K in the absolute base by the present measurements from our published relative measurements.

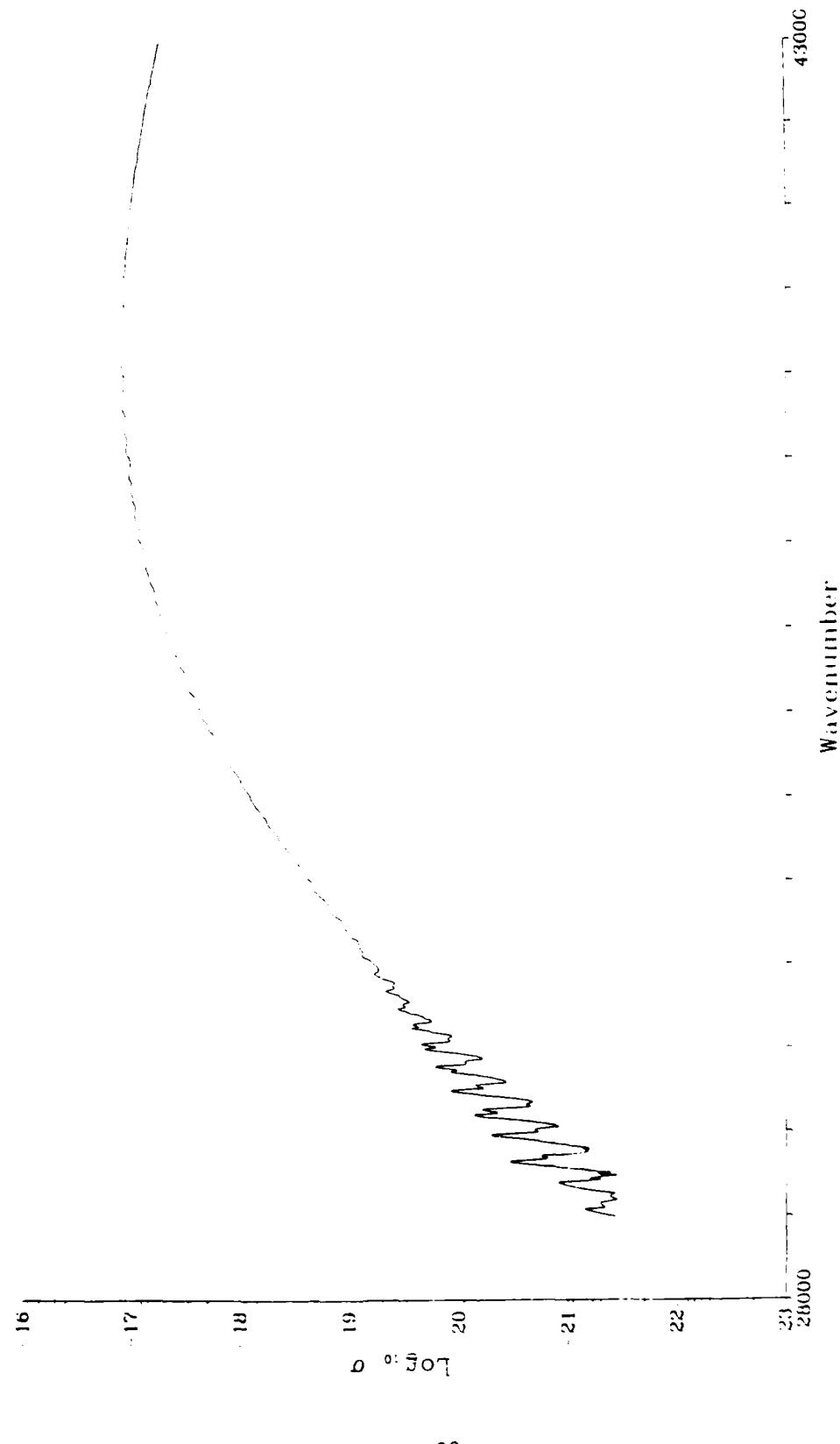


Figure 3. The cross sections of ozone at 195 K calculated from parameters supplied by Bass.